

**SONY®**

# Digital Video Switcher

**DVS-8000/8000C**

---

**User's Guide** English

**BKDS-8010 Switcher Control Panel**  
**2nd Edition**  
**Serial number 10001 and Higher**

## For customers in the USA

### WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important-To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements.

"This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC Rules."

-or-

"This equipment complies with the requirements in Part 15 of FCC Rules for a Class A Computing Device."

-or equivalent.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

**WARNING:** Using this unit at a voltage other than 120 V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### For customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

### Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

### Bescheinigung des Herstellers

Hiermit wird bescheinigt, daß das Schalteinheit Steuerpult BKDS-8010 in Übereinstimmung mit den Bestimmungen der EG-Richtlinie 82/499/EWG funktentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.  
Sony Corporation

### Hinweis

Gemäß dem Amtsblatt des Bundesministers für das Post- und Fernmeldewesen Nr. 163/1984 wird der Betreiber darauf aufmerksam gemacht, daß die von ihm mit diesem Gerät zusammengestellte Anlage auch den technischen Bestimmungen dieses Amtsblattes genügen muß.

# Contents

## Chapter 1 Overview

Manuals for the DVS-8000/8000C Digital Video	
Switcher System .....	1-1
Principal Features .....	1-3

## Chapter 2 Location and Function of Parts

Connector Panel .....	2-1
Connection diagram .....	2-4
Pin Assignments for the TERMINAL and	
GPI connectors .....	2-5
Control Panel Blocks .....	2-8
M/E-1 and M/E-2 Blocks .....	2-10
Bus section .....	2-11
Transition control section .....	2-12
Keying control section .....	2-15
PGM/PST Block .....	2-19
Bus section .....	2-19
Transition control section .....	2-20
Keying control section .....	2-20
FADE TO BLACK section .....	2-20
Common Control Block .....	2-22
AUX/PVW bus section .....	2-23
ENABLES/SAFE TITLE section .....	2-24
COLOR BKGD (color background) section .....	2-25
MASKS section .....	2-26
WIPE section .....	2-28
Control knobs .....	2-32
Menu Control Block .....	2-33
Menu section .....	2-34
TOP MENU section .....	2-35
DELEGATION section .....	2-37
EDIT section .....	2-38
Key frame control section .....	2-40
Numeric keypad .....	2-41
Joystick control section .....	2-42

Chapter 3

Switcher

Operation

(Continued)

Powering the System On..... 3-1

Basic Switcher Operation..... 3-2

Video building sequence ..... 3-2

How the video output from each video block is made .. 3-5

Delegation system ..... 3-7

Button indications..... 3-8

Control knobs..... 3-9

Next Transition Selection ..... 3-10

Changing the background..... 3-10

Inserting or deleting key 1 ..... 3-10

Inserting or deleting key 2 ..... 3-11

Changing background and keys simultaneously ..... 3-12

Selecting a Transition Type ..... 3-13

Mix ..... 3-13

Super mix..... 3-14

Non-additive mix (NAM) ..... 3-14

Preset background mix ..... 3-15

Wipe..... 3-15

DME wipe..... 3-16

Executing a Transition ..... 3-17

Auto transition ..... 3-17

Manual transitions..... 3-19

Transition progress indication ..... 3-19

Combining an auto transition with a manual transition..... 3-20

Fader lever operation in bus-uninterchangeable mode..... 3-22

Transition preview..... 3-23

Fade to black..... 3-24

Keying Operations..... 3-25

Overview of keying operations ..... 3-25

Keying control section delegation ..... 3-26

Selecting the key type..... 3-27

Selecting the key fill video ..... 3-30

Selecting the key source ..... 3-30

Key source inversion ..... 3-31

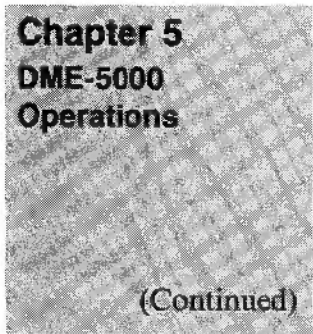
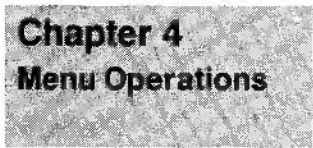
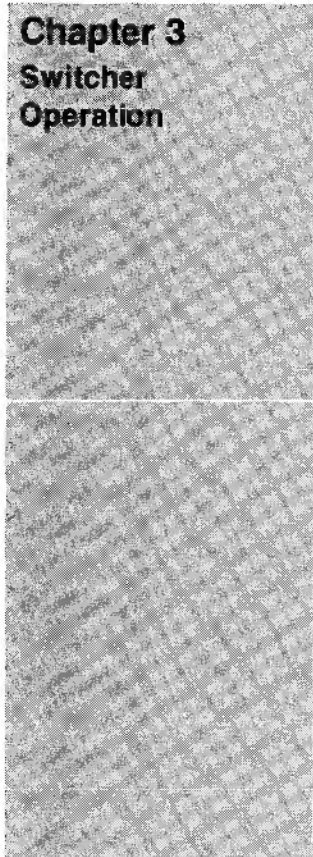
Key mask ..... 3-32

Selecting the key border..... 3-36

Key border modification..... 3-43

Interchanging the two keys ..... 3-43

Inserting and deleting keys ..... 3-44



Wipe Operations.....	3-45
Overview of wipe operations.....	3-45
WIPE section delegation .....	3-47
Wipe pattern selection .....	3-49
Pattern modification .....	3-55
Pattern modulation.....	3-62
Pattern rotation .....	3-64
Adjusting the pattern position and direction of motion.....	3-66
Modifying the pattern edge .....	3-68
Selecting the wipe direction .....	3-70
Storing and retrieving wipe patterns.....	3-71
Restricting the wipe range .....	3-72
Cancelling wipe modification effects.....	3-73
DME Wipe Operations.....	3-74
Types of DME wipe .....	3-74
Single mode and dual mode .....	3-76
DME wipe modification.....	3-77
DME wipe transitions.....	3-78
Carrying out a key transition with a DME wipe .....	3-80
Color Background Operation .....	3-81
External Equipment Operation .....	3-83
Safe Title Function .....	3-84
Structure of the Menu System .....	4-1
The TOP MENU buttons .....	4-2
Making Settings .....	4-4
About the SWITCHER Menu .....	4-8
Basic DME-5000 Operations .....	5-1
Menus used for DME-5000 operations.....	5-2
Channel Selection.....	5-4
Manipulating the Image with the Joystick .....	5-6
Source and target coordinate frames.....	5-6
Image movement and resizing.....	5-9
Rotating the image.....	5-12
Manipulating the aspect ratio, skew, and perspective .....	5-14

**Chapter 5**  
**DME-5000**  
**Operations**

Background and Edge Functions—BKGD &  
EDGE Menu ..... 5-17  
Coloring the background..... 5-17  
Edge settings ..... 5-19  
Cropping ..... 5-23  
Drop shadows ..... 5-25  
Freeze and Recursion—FREEZE & RECURSIVE  
Menu ..... 5-27  
Freezing and strobing the input image ..... 5-27  
Output image recursion effects ..... 5-29  
Spatial Manipulation—PICTURE MODIFY Menu ..... 5-34  
Mirror functions ..... 5-34  
Splitting functions ..... 5-36  
Dimming and fading ..... 5-38  
Defocusing ..... 5-40  
Multimove..... 5-41  
Clipping ..... 5-42  
Video Modification—VIDEO MODIFY Menu ..... 5-43  
Posterization and solarization ..... 5-43  
Negative video ..... 5-44  
Contrast ..... 5-45  
Mosaic function..... 5-46  
I/O Control Operations—IN/OUT CONTROL  
Menu ..... 5-47  
Selecting the input video and key signals ..... 5-48  
Selecting the key mode ..... 5-51  
Combiner settings..... 5-52  
Video processor settings ..... 5-52  
Controlling Non-linear Effects—NON LINEAR  
CONTROL Menu ..... 5-53  
Monitor Output Control—GRAPHIC/TEXT Menu ... 5-54

**Chapter 6**  
**Snapshot**  
**Operations**

Overview of Snapshot Operations ..... 6-1  
Saving and Recalling Snapshots..... 6-3  
Using a Menu Operation..... 6-3  
Using a Button Operation ..... 6-6  
Applying Attributes to a Snapshot ..... 6-7  
Applying attributes on the Switcher ..... 6-8

## Chapter 7 Key Frame Operations

Overview of Key Frame Operations .....	7-1
Key Frames and Effects .....	7-1
Basic Procedure Up To Effect Execution .....	7-2
Menus Used for Key Frame Operations .....	7-4
Selecting Operating Channels .....	7-6
Recalling Registers .....	7-8
Switching to Edit Mode .....	7-10
Specifying the Edit Points .....	7-11
Using the Fader Lever .....	7-12
Using a Button Operation .....	7-12
Using a Menu Operation .....	7-13
Creating and Editing Key Frames .....	7-15
Setting Time Values and Path Control .....	7-19
Setting Time Values.....	7-20
Setting the Path Type.....	7-25
Executing Effects .....	7-31
Applying Execution Attributes to an Effect .....	7-34
Effect Information Display .....	7-35
Display Modes.....	7-35
Selecting the Display Mode .....	7-38
Key Frame Utilities .....	7-39
Copying from One Register to Another .....	7-41
Copying from One Channel to Another.....	7-43
Moving the Contents of a Register .....	7-44
Interchanging Two Registers .....	7-45
Adding to the Contents of a Register .....	7-46
Deleting the Contents of a Register.....	7-47
Enabling or Inhibiting Writing to a Register.....	7-49
Naming a Register .....	7-51

## Chapter 8 Floppy Disk Operations

(Continued)

Overview of Floppy Disk Operations .....	8-1
Menus Used for Disk Operations.....	8-3
Specifying Files .....	8-6
File Operations.....	8-10
File Load .....	8-10
File Save .....	8-14
File Deletion .....	8-15



**Chapter 8**  
**Floppy Disk**  
**Operations**

Disk Utilities ..... 8-16

    Disk Formatting..... 8-17

    Disk Labeling..... 8-19

    File Naming..... 8-20

    Write-Protect/Write-Enable Setting..... 8-22

**Chapter 9**  
**Setup Operations**

Menus Used for Setup ..... 9-2

Accessing Menus and Saving Settings—SETUP Menu.... 9-3

    Displaying the SETUP Menu ..... 9-3

    Saving and Recalling User Settings..... 9-4

Setting the System Clock—SYSTEM SETUP Menu ..... 9-6

Making Switcher Settings—SW SETUP Menu ..... 9-8

    Making Operating Mode Settings—

        CONFIGURATION Menu ..... 9-9

    Making Input Signal Settings—INPUT CONTROL

        Menu ..... 9-17

    Phase Adjustments to the Primary Input Signal—

        INPUT VIDEO Menu ..... 9-18

    Making Keyer Settings—KEYER Menu..... 9-25

    Making Wipe Settings—WIPE Menu ..... 9-31

    Making Chroma Key Settings—CHROMAKEY

        Menu ..... 9-33

    Making Output Signal Settings—OUTPUT

        CONTROL Menu..... 9-35

    Making GPI Input Settings—GPI IN Menu ..... 9-37

    Making Tally Display Settings—TALLY Menu ..... 9-39

Setting Up the DME-5000—DME SETUP Menu ..... 9-40

    Setting the Operation Mode—CONFIGURATION

        Menu ..... 9-42

    Making DME Input Settings—INPUT CONTROL

        Menu ..... 9-49

    Making Output Signal Settings—OUTPUT

        CONTROL Menu..... 9-59

    Setting the GPI Inputs—GPI IN Menu ..... 9-61



---

<b>Chapter 10</b>	
<b>Principal Specifications</b>	..... 10-1
<b>Appendix</b>	..... A-1

# Chapter 1

## Overview

---

### Manuals for the DVS-8000/8000C Digital Video Switcher

System .....	1-1
Principal Features .....	1-3

# Overview

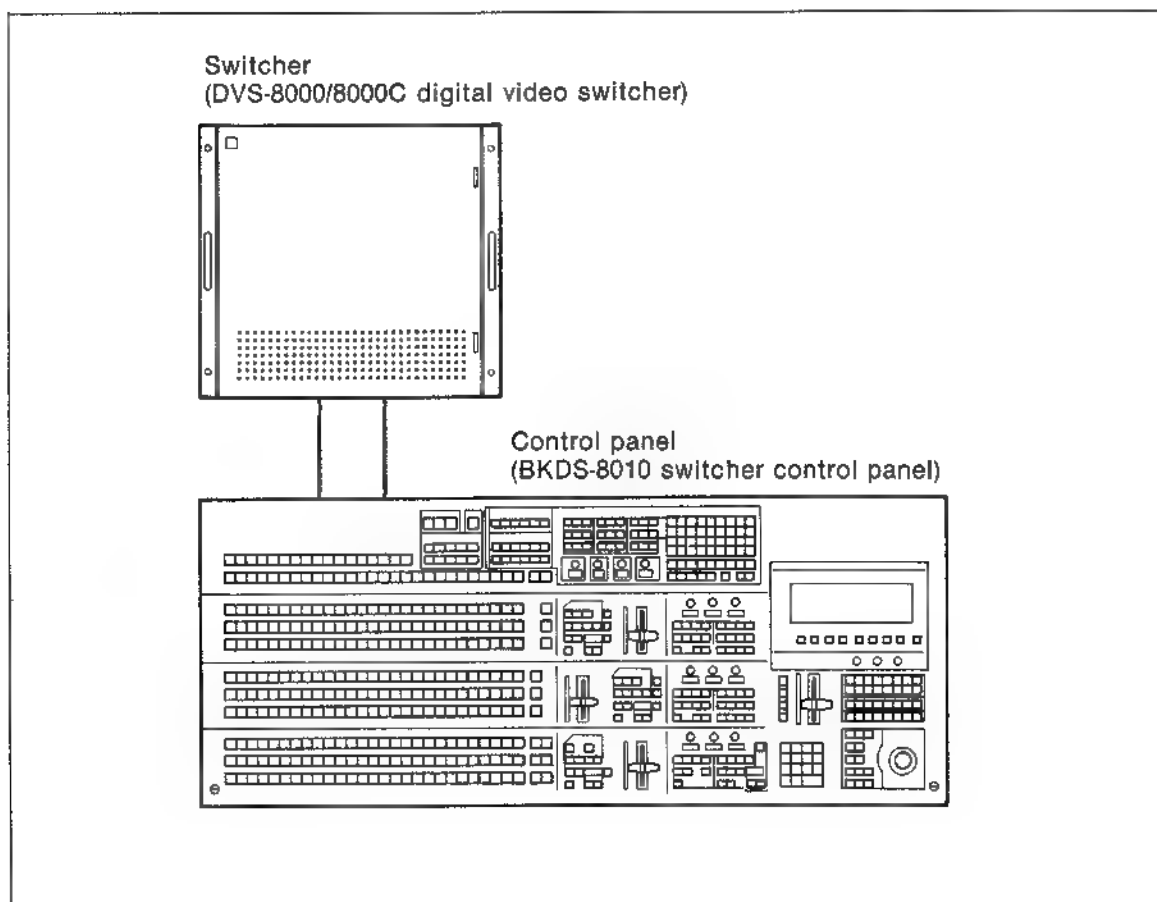
---

## Manuals for the DVS-8000/8000C Digital Video Switcher System

The DVS-8000/8000C system consists of a DVS-8000/8000C digital video switcher and a BKDS-8010 switcher control panel. Note that this manual uses the following terms to refer to these components:

Switcher: DVS-8000/8000C digital video switcher

Control panel: BKDS-8010 switcher control panel



The following manuals accompany the two products.

**DVS-8000/8000C operation and maintenance manual**

(Supplied with the switcher.)

Section 1 “OPERATION” gives an overview of the DVS-8000/8000C system, explains the parts of the switcher, and gives example system configurations. Personnel in charge of management of the overall video switcher system are required to read this section first.

Section 2 and following sections cover system installation and maintenance. Consult them for regular maintenance requirements and also for error-finding in the event of a malfunction.

**DVS-8000/8000C user’s guide**

(This manual. Supplied with the control panel.)

This describes the parts of the control panel and explains how to use the DVS-8000/8000C system—keep it handy for reference. Note that it also covers the use of the system with a DME-5000 digital multi effects when connected.

**BKDS-8010 maintenance manual**

(Supplied with the control panel.)

This describes the hardware of the control panel, and will be required for installation and maintenance.

---

## Principal Features

This control panel is used to operate a DVS-8000/8000C digital video switcher. When one or more DME-5000 digital multi effects units are connected to the switcher system, it also allows you to operate all of them.

The principal features of the DVS-8000/8000C switcher system are as follows.

### **Three video blocks**

The DVS-8000/8000C system contains three video blocks—M/E-1 (mix/effects-1), M/E-2, and PGM/PST (program/preset)—whose output signals can be connected to monitors, VTRs, or other video equipment. Either the M/E-1 or -2 block can directly take in the output of the other block to use it as material for a more or less complicated video, which can then be input to the PGM/PST block to be used in making the switcher's final output video.

### **Powerful key modifiers**

The system is provided with a total of five separate keyers: two for each of the M/E blocks and one for the PGM/PST. A key source and a key fill can be set for each of these keyers. A variety of key modifiers are also provided for bordering, converting, masking by wipe patterns, and other types of key modifications.

### **New design of wipe generator circuitry**

The system contains five wipe generators: one for each of the three video blocks and two allotted for background synthesis. At each generator wipe generation and pattern modification take place independently, which gives you a large number of wipe pattern choices. If you register a set of wipe data representing a particular combination of pattern and modification, you can recall the data for repeated use of that combination.

### **Enhanced image transformation with optional DME-5000**

You can connect up to four DME-5000 digital multi effects units to the switcher system, and operate them from the switcher control panel. This allows you to add, especially by menu operation, still enhanced effects such as rotation and displacement in a three-dimensional coordinate system, on images made up by the switcher.

### **Controls delegation system for the control panel**

For wiping, keying and menu operation, most controls on the control panel can be delegated to particular operation modules such as wipe generators and keyers. This delegation system considerably reduces the otherwise required number of controls and makes the control panel easy to operate.



## Chapter 2

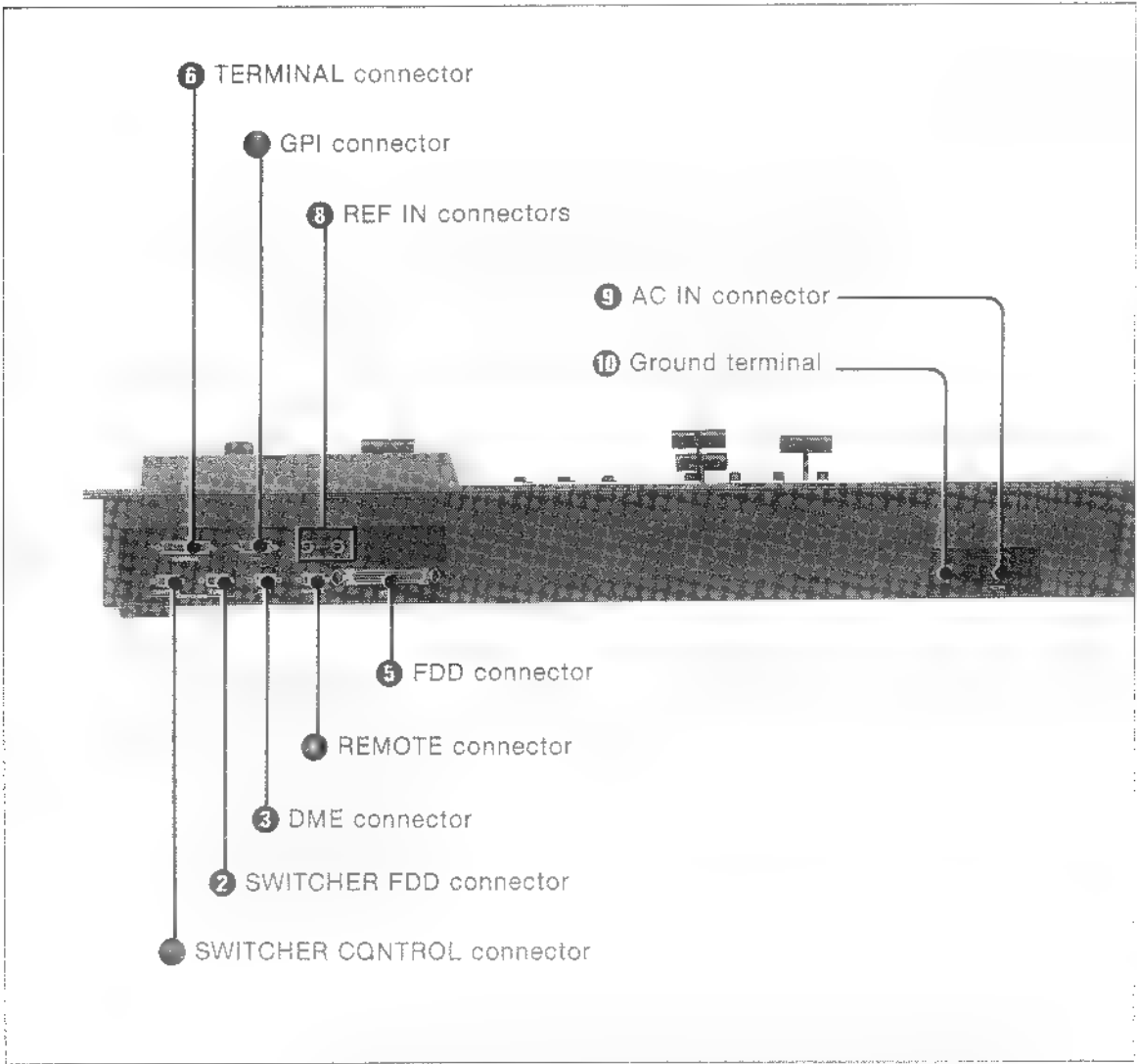
### Location and Function of Parts

---

Engine and Fuel	2-1
Control Panel Module	2-8
ME (P-1) and ME (P-2) Module	2-10
PCM/ECM Block	2-10
Computer Control Module	2-22
Motor Control Module	2-27

# Location and Function of Parts

## Connector Panel



**1 SWITCHER CONTROL connector (D-SUB 9-pin)**  
Connected to the DVS-8000/8000C switcher, this allows the control panel to operate all the functions of the switcher through an RS-422A interface.

**② SWITCHER FDD (floppy disk drive) connector (D-SUB 9-pin)**

Connected to the DVS-8000/8000C switcher, this allows data to be exchanged, via RS-422A and 50-pin interfaces, between the switcher and the floppy disk drive connected to the control panel.

**③ DME (digital multi effects) connector (D-SUB 9-pin)**

This is for connection to a DME-5000 digital multi effects, to allow it to be controlled from this control panel through an RS-422A interface.

**④ REMOTE connector (D-SUB 9-pin)**

This connector complies with RS-422A, and is for connection to external equipment for system expansion purposes.

**⑤ FDD (floppy disk drive) connector (Amphenol 50-pin)**

This is connected to the 3.5" floppy disk drive supplied with this control panel and used for data exchange between the control panel and the floppy disk drive.

**⑥ TERMINAL connector (D-SUB 25-pin)**

Connect this to a control terminal or another external device, when necessary. It complies with the RS-232C standard; for pin assignments see page 2-5.

**⑦ GPI (general purpose I/O) connector (D-SUB 15-pin)**

Connected to an external device, this connector allows trigger signals to be input and output. There are four inputs and four outputs. For pin assignments see page 2-6.

**⑧ REF (reference signal) IN connectors (BNC)**

These are loop-through connectors used to input a reference video signal or reference sync signal. Connect the input to either of the connectors, and the other serves as a loop-through output. If not using the loop-through output, always connect the 75 ohm terminator to the other connector.

---

**⑨ AC IN connector**

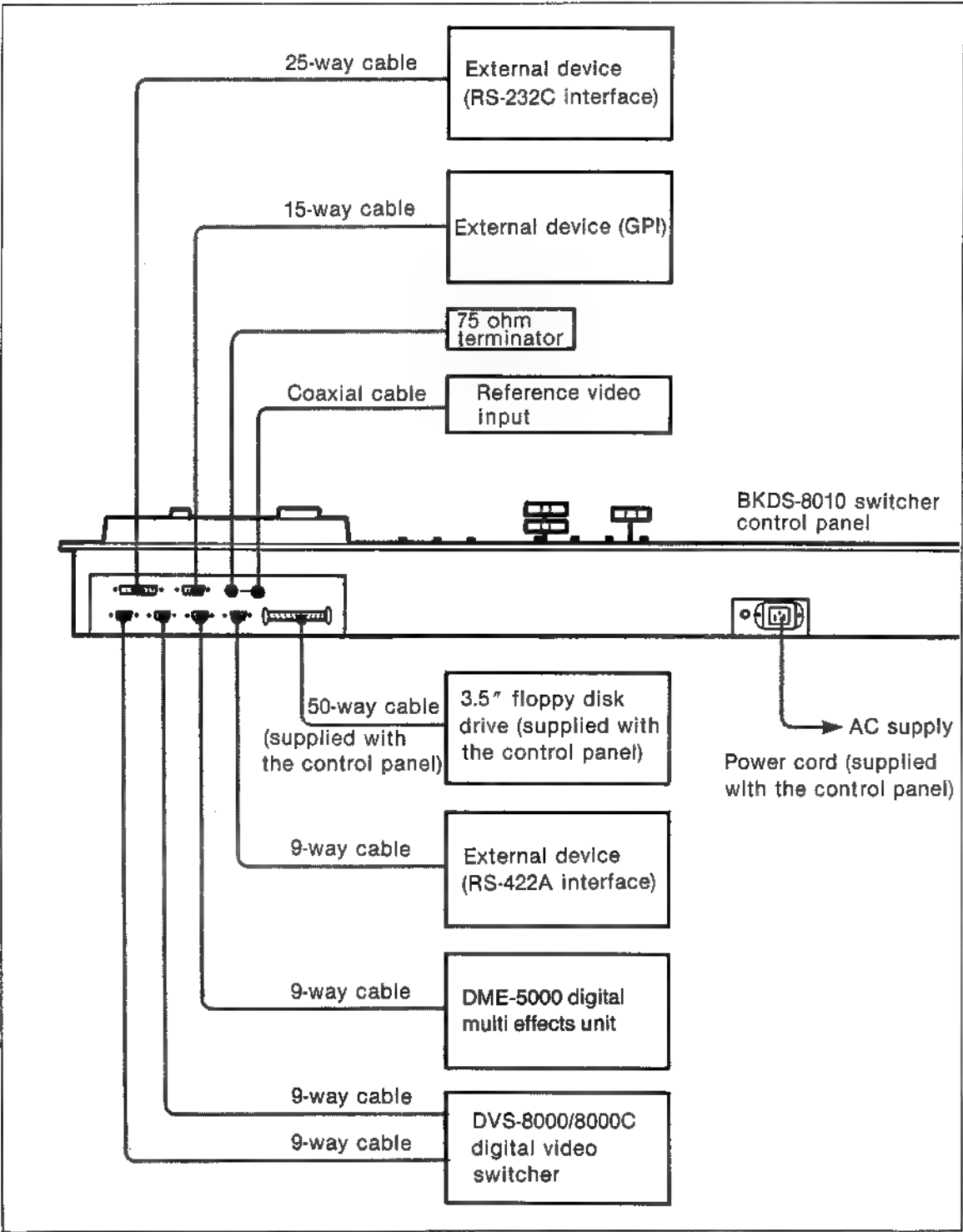
Connect to an AC supply with the supplied power cord.

**⑩ Ground terminal**

Connect to system ground.

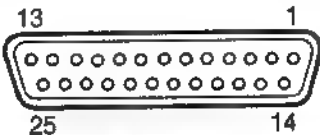
# Location and Function of Parts

## Connection diagram



**Pin assignments for the TERMINAL and GPI connectors**

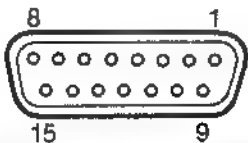
**TERMINAL connector (D-SUB 25-pin female)**



Pin	Signal name	Function
1	FG	Frame ground
2	RXD (input)	Receive data
3	TXD (output)	Transmit data
4	RTS (input)	Ready to send
5	CTS (output)	Clear to send
6	—	—
7	GND	Signal ground



GPI connector (D-SUB 15-pin female)



Pin	Signal name	Function
1	FG	Frame ground
2	GPI-1 OUT	GPI-1 relay output
3	GPI-2 OUT	GPI-2 relay output
4	GPI-3 OUT	GPI-3 relay output
5	GPI-4 OUT	GPI-4 relay output
6	GPI-1 IN	GPI-1 input
7	GPI-3 IN	GPI-3 input
8	GPI IN GND	GPI input ground
9	GPI-1 OUT	GPI-1 relay output
10	GPI-2 OUT	GPI-2 relay output
11	GPI-3 OUT	GPI-3 relay output
12	GPI-4 OUT	GPI-4 relay output
13	GPI IN GND	GPI input ground
14	GPI-2 IN	GPI-2 input
15	GPI-4 IN	GPI-4 input

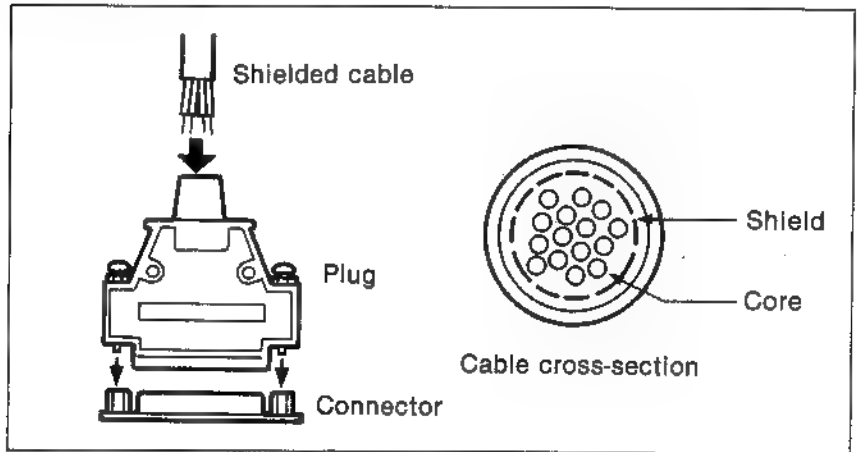
- The relay outputs are closed when active, open when non-active.
- The inputs are negative logic.

### Making connections

When using the TERMINAL connector ⑥ or GPI connector ⑦, make sure that each core of the connection cable corresponds correctly with each pin of the connector. For pin assignments of the connector at the other end of the cable, refer to the manual for the device to be connected.

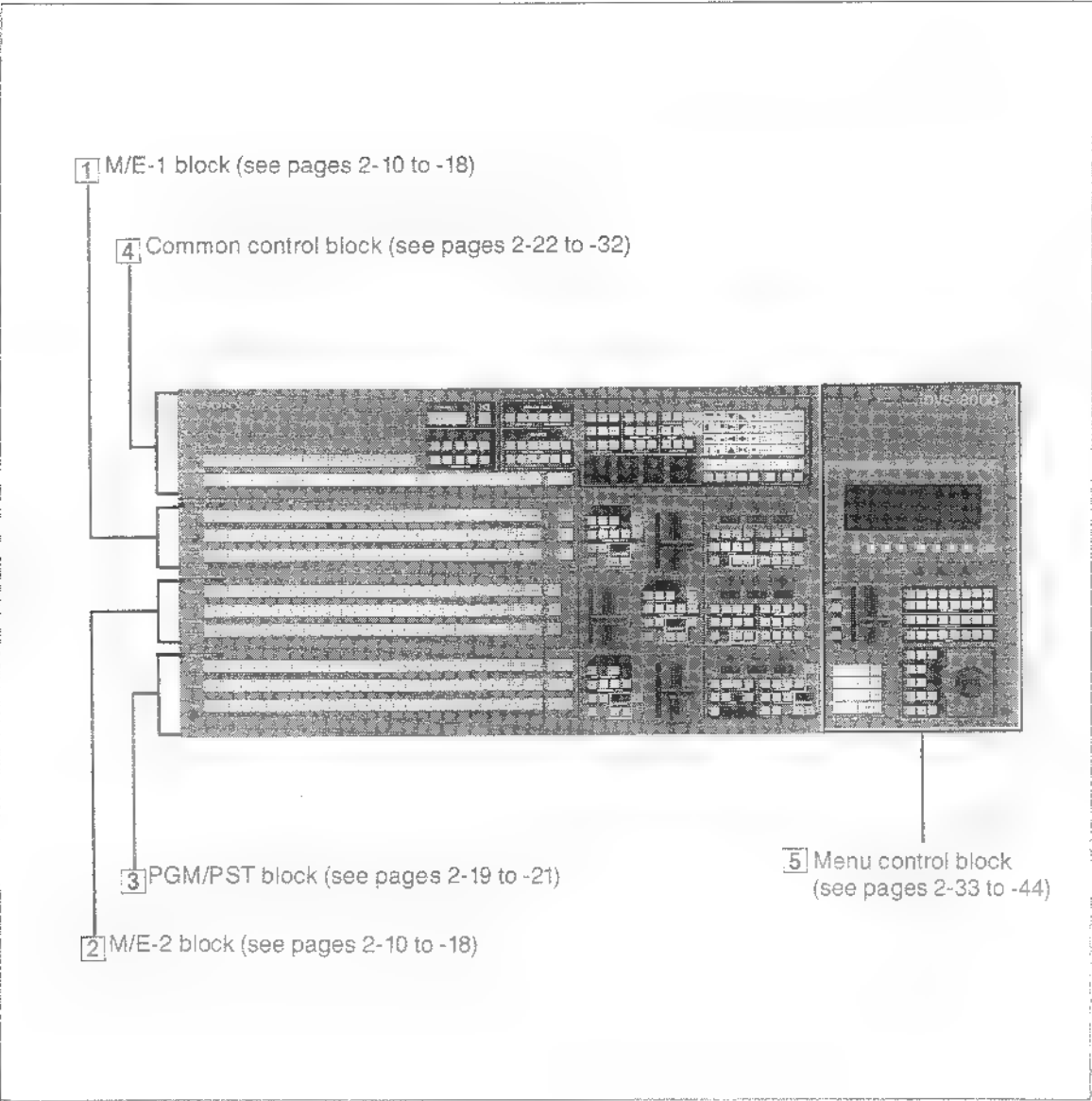
### Caution

Use a cable size of at least AWG-28 (conductor resistance not more than 226 ohm/km), and use only shielded cables.



Control Panel Blocks

The control panel is divided into five main blocks of buttons and other controls, as follows. These blocks are explained in detail on the pages shown in parentheses.



---

**1 M/E-1 (mix/effects-1) block**

This bank produces the M/E-1 video. It allows two keys to be inserted. Using the M/E-2 buttons on each bus, the M/E-2 video can be used as background, key source, or key fill.

**2 M/E-2 (mix/effects-2) block**

This bank produces the M/E-2 video. Its functions correspond to those of M/E-1 block.

**3 PGM/PST (program/preset) block**

This block produces the final output video from the switcher. It allows one key (downstream key) to be inserted. The M/E-1 and M/E-2 buttons on each bus allow the M/E-1 and M/E-2 video to be used as background, key fill, or key source. This block also has a fade-to-black function, which can be used to fade in or fade out to or from black.

**4 Common control block**

This block controls the overall operation of the switcher, and provides functions which are common to the M/E-1, M/E-2 and PGM/RST blocks.

It is divided into the following five sections:

- The AUX/PVW (auxiliary/preview) section, which switches the external output and preview video.
- ENABLES section, which enables control by external equipment such as an editor.
- The COLOR BKGD (background) section, which provides a two-color background, using a wipe pattern.
- The MASKS section, for masking a portion of a key source.
- The WIPE section, for selecting a wipe pattern.

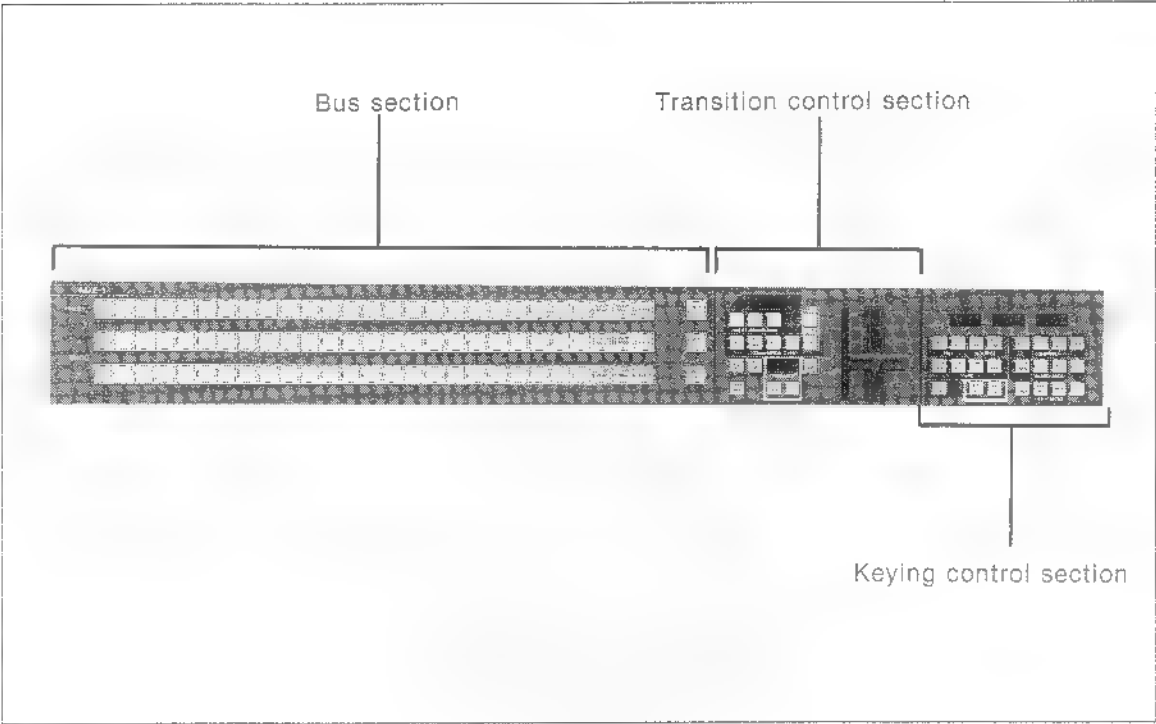
**5 Menu control block**

The menu control block provides interactive control of the switcher set-up options and allows operation of a DME-5000 digital multi effects.

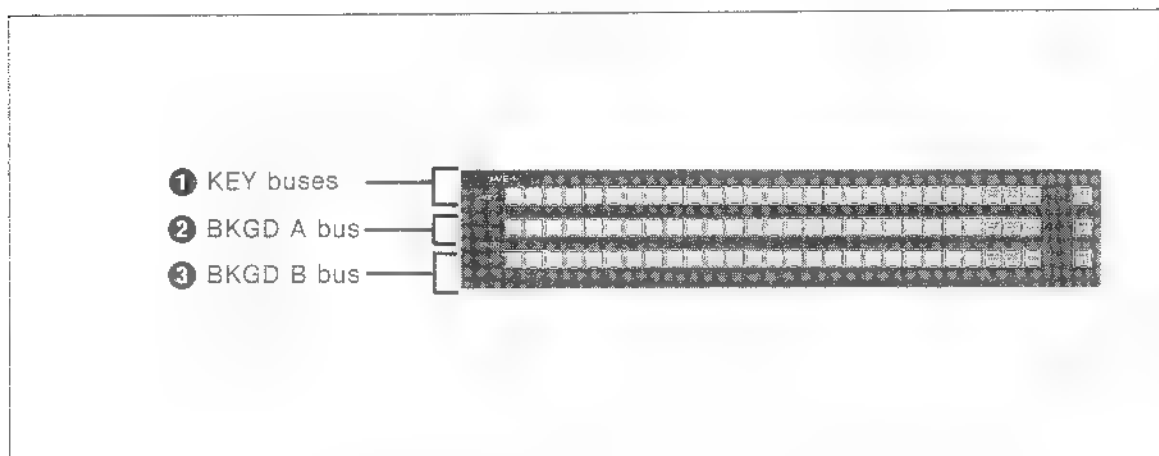
It includes a joystick for wipe pattern positional adjustment and DME-5000 control, and a numeric keypad for inputting values.

M/E-1 and M/E-2 Blocks

These two blocks are divided into three sections each, as shown in the photograph.



## Bus section



### ① KEY buses

This row of buttons controls both key 1 and key 2 buses to select key fill and key source. Use the KEY1 SEL or KEY2 SEL button to determine which key bus is being controlled.

### ② BKGD (background) A bus

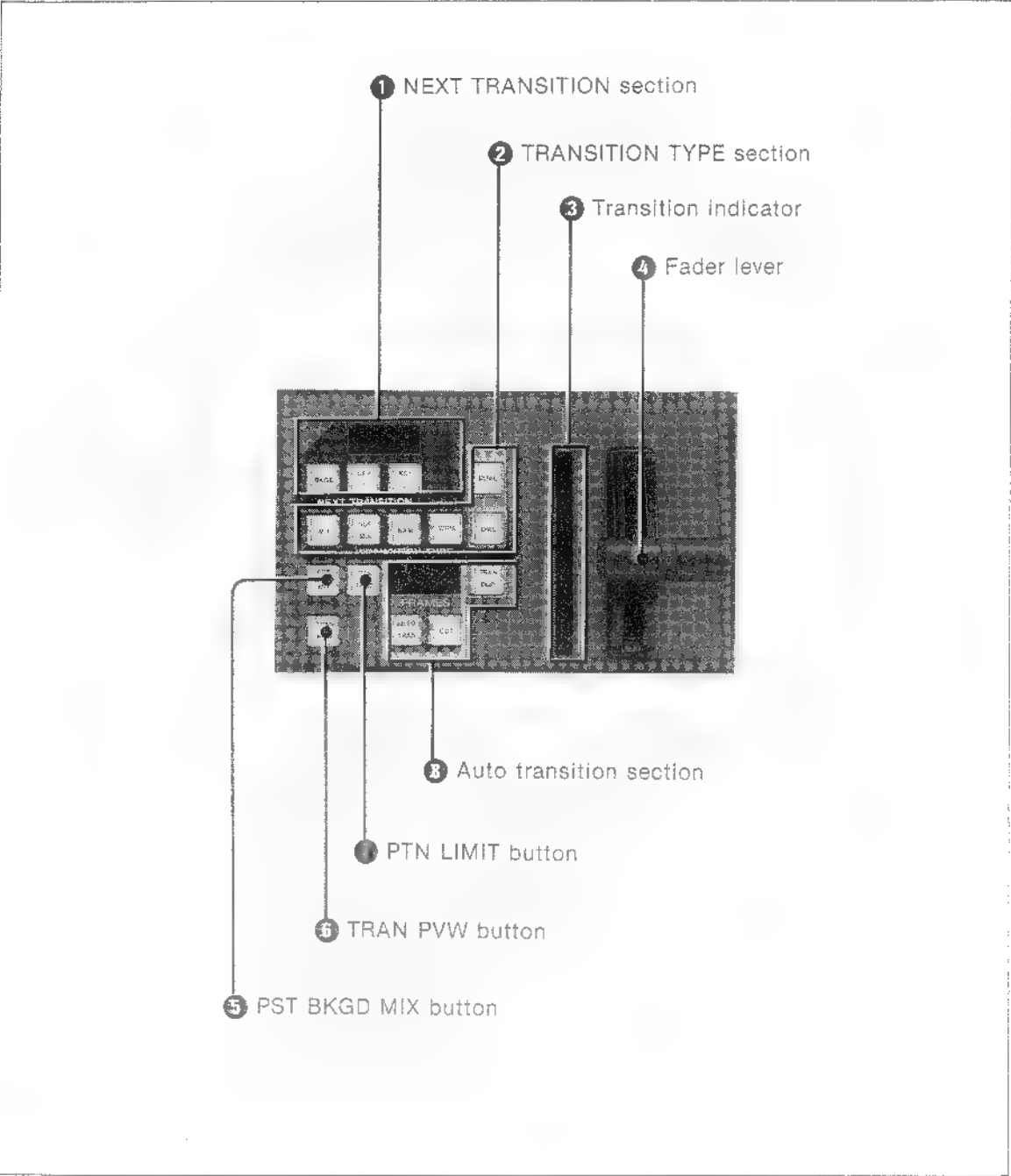
This bus is for selecting the currently output background video. Except during a background transition, this bus supplies the video signal which will be output from each block as the program output.

### ③ BKGD (background) ■ bus

This bus is for selecting the video after the next background transition, which will replace the background currently selected on the BKGD A bus. It can be used with the preview monitor to check the video after the next transition.



Transition control section



---

### ❶ NEXT TRANSITION section

These controls determine which portion of the video the next transition will affect. Any combination of buttons can be pressed simultaneously.

**BKGD (background) button:** Causes the background to change from the background on the BKGD A bus to that on the BKGD B bus.

**KEY 1 button:** Inserts or deletes key 1.

**KEY 2 button:** Inserts or deletes key 2.

The indicators above the KEY 1 and KEY 2 buttons show the status of the keys.

**ON indicator:** Shows that this key is being inserted over the output video from the M/E block.

**OVER indicator:** When both keys are inserted, this indicates the key which is on top.

### ❷ TRANSITION TYPE section

**MIX button:** Carries out a lap-dissolve between the video on the BKGD A bus and BKGD B bus. As the transition advances, output level of each bus changes so that the total output level of the two buses remains constant. If the fader lever is moved to the middle of its range, output level of each bus is 50%.

**SUPER MIX button:** Carries out a special mix in which output level of the BKGD A bus remains constant while that of the BKGD B bus increases. If the fader lever is moved to the middle of its range, output level of BKGD B bus reaches 100%, the same as that of the BKGD A bus. A key transition cannot be used with this type of mix.

**NAM (non-additive mix) button:** This is a mix in which the higher of the two signals selected on the BKGD A and BKGD B buses is used as the signal. It cannot be used for a key transition.

**WIPE button:** Carries out a wipe, using the wipe pattern selected on the WIPE section of the common control block.

**DME (wipe) button:** With a DME-5000 digital multi effects connected to the switcher system, this carries out a special wipe using the DME-5000.

**DUAL button:** Selects the DME wipe mode. When the button is lit it is in dual mode, and when off it is in single mode.

**③ Transition indicator**

During a transition, this shows the current position of the transition.

**④ Fader lever**

Used to carry out a manual transition.

**⑤ PST BKGD (preset background) MIX button**

Carries out a two-stage mix. In the first transition the video changes to the currently preset black or color background, and in the second transition it changes to the new video. When this button is lit, the MIX button in the TRANSITION TYPE section comes on automatically.

**⑥ TRAN PVW (transition preview) button**

This allows you to view the transition before executing it. When this button is on, the fader lever controls the preview output, and does not affect the program output.

**⑦ PTN (pattern) LIMIT button**

This is used to restrict the range of a transition, so that a portion of the original video remains after the transition. When this button is on, even when the fader lever is moved to its limit, the video only changes within the range set in the keying control section.

**⑧ Auto transition section**

These controls are used when carrying out a transition.

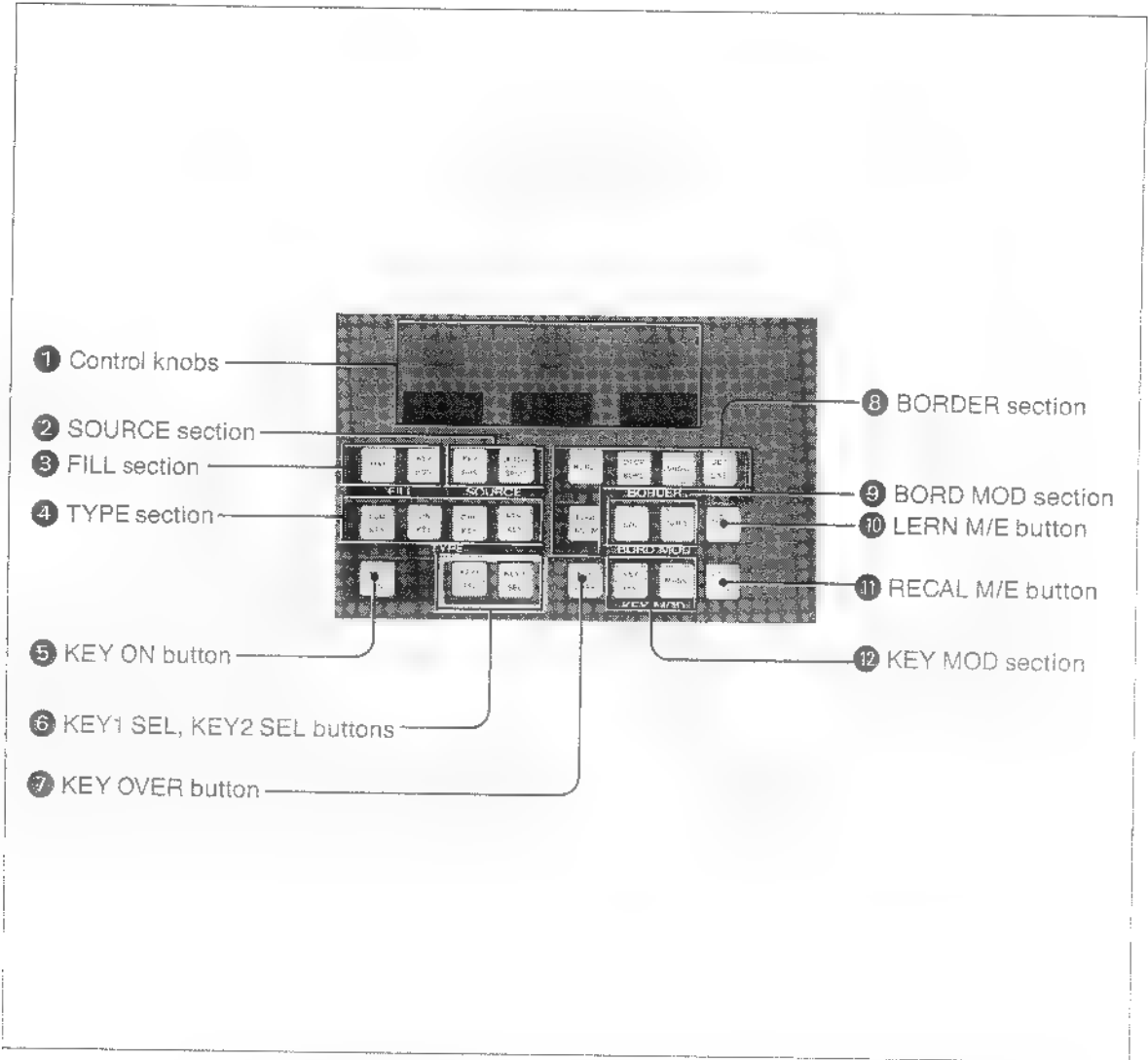
**AUTO TRAN (transition) button:** Carries out an automatic transition, using the transition duration currently set.

**CUT button:** This button gives an instantaneous transition.

**TRAN DUR (transition duration) button:** Used when setting the duration of the transition.

**FRAMES display:** Shows the currently set transition duration in frames.

Keying control section



1 Control knobs

These three knobs make adjustments for the button in the transition control section or keying control section which is on in high-tally (green). The display in front of each button shows the initial letter of the function being adjusted, and its current numeric value.

### ② SOURCE section

This selects the key source signal which is used to cut a hole in the background picture for key effect.

**KEY BUS button:** Press to use the signal selected on the key bus as the key source. If that signal has been selected as the key fill, the same signal will be used both for the key fill and the key source (self key). If you want the key source signal to be different from the currently selected key fill signal, use the **AUTO/SPLIT button (SPLIT function)**.

**AUTO/SPLIT button:** The stored signal corresponding to the selected key fill will be automatically used as the key source (**AUTO**). Holding down this button, press one of the **KEY** input selection buttons to select a signal other than the currently selected key fill as the key source. (**SPLIT**)

### ③ FILL section

This selects the key fill signal which is used to fill the hole cut in the background picture by the key source signal.

**MAT (matte) button:** Press to use an internally generated color matte signal.

**KEY BUS button:** Press to use the signal selected on the key bus.

### ④ TYPE section

This selects the type of key effects.

**LUM (luminance) KEY button:** Press to cut a hole in the background using the Y signal as the key source signal. In the DVS-8000C switcher, a special process is used to perform a high quality keying called “clean key”.

#### Note

If your switcher is a DVS-8000C, replace the button ID label (or switch chip) “LUM KEY” with the label “CLN KEY”. On how to replace button ID labels, refer to the “How to install the unit” section in the maintenance manual supplied with the control panel, beginning on page 1-4(E).

---

**LIN (linear) KEY button:** In the DVS-8000, pressing this button cuts a hole in the background according to the key source signal including the chroma component.

In the DVS-8000C, pressing this button cuts a hole using the Y signal as the key source signal.

**CHR (chroma) KEY button:** Press to cut a hole only where the key source has a particular hue. This requires the optional chroma key function.

**PTN (pattern) KEY button:** Press to use the wipe pattern selected in the WIPE section as the key source for cutting a hole in the background.

**5 KEY ON button**

Instantaneously inserts or deletes the key selected by the KEY input selection buttons.

**6 KEY1 SEL (selection), KEY2 SEL buttons**

These select which key is controlled from the keying control section and the KEY bus section. One of the two buttons is always on.

**7 KEY OVER button**

This switches which of the two keys is on top of the other. It lights when the key selected by the KEY input selection buttons is on top. When this button is pressed the "OVER" indicators in the transition control section also change.

**8 BORDER section**

These controls determine the treatment of the key border.

**BORD (border) button:** Puts a uniform border around a key.

**DROP BORD (border) button:** Places a border in a specified direction only such as lower right or lower left.

**SHDW (shadow) button:** Places a shadow in a specified direction only such as lower right or lower left.

**OUTLINE button:** Places an outline around a key and inserts key fill to the outline only.

**EDGE NORM (normal) button:** Pressing this button disables all of the other buttons in the BORDER section.



### ⑨ BORD MOD (border modifiers) section

**COL (color) button:** Changes the color of the border.

**SOFT button:** Gives the border a soft look.

### ⑩ LERN (learn) M/E button

This allows the current effect generated on this M/E block to be saved in memory. Press this button, then use the numeric keypad to enter the number of a register where it is to be saved.

An effect saved and recalled in this way is termed a snapshot.

Use the SNAPSHOT menu for the PGM/PST block or a DME snapshot.

### ⑪ RECAL (recall) M/E button

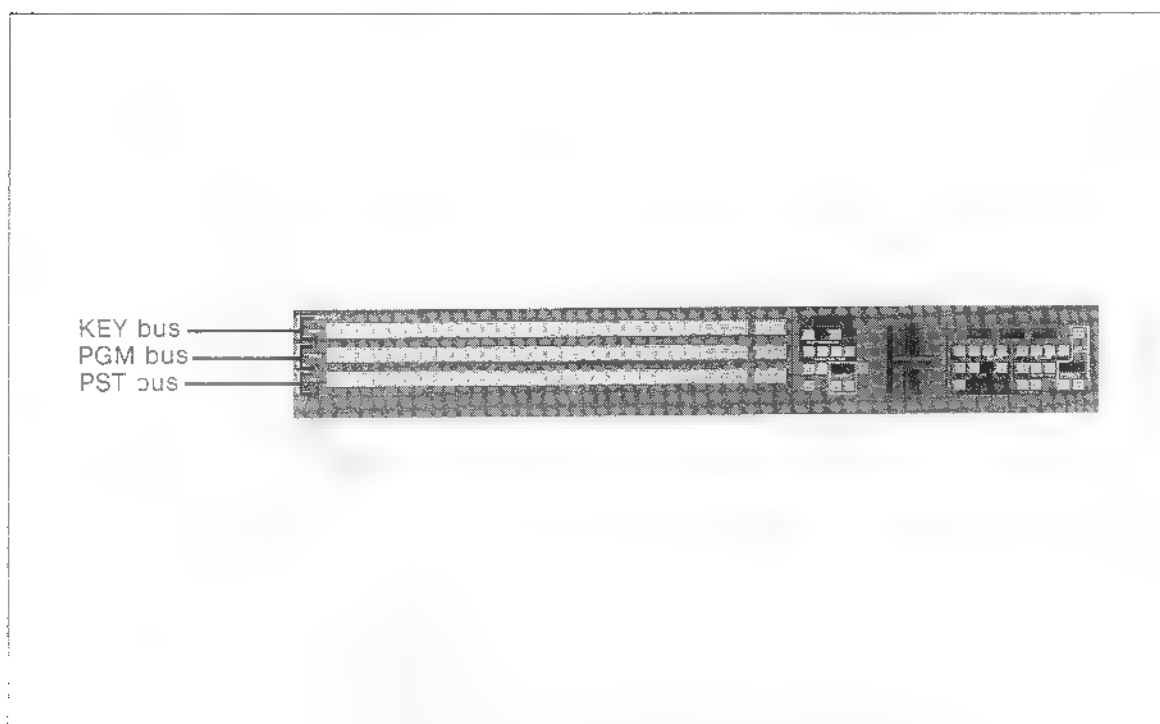
Press this button, then enter a register number with the numeric keypad, to recall the corresponding saved effect.

### ⑫ KEY MOD (modifiers) section

**KEY INV (invert) button:** This inverts the polarity of the key source so that dark letters are shown against bright background.

**MASK button:** This masks a portion of the key source, using the mask source selected in the MASKS section of the common control block.

## PGM/PST Block



The configuration of the PGM/PST block is similar to that of the two M/E blocks, except in the following respects.

### Bus section

Because this bank produces the final video output, the buses have different names, as follows.

**KEY bus:** This bank has only one key bus and allows only one key to be inserted. The keyer for this bank is called the downstream keyer.

**PGM (program) bus:** This corresponds to the BKGD A bus on the two M/E banks.

**PST (preset) bus:** This corresponds to the BKGD B bus on the two M/E banks.

The functions of the buses are the same as on the M/E blocks, and any of the buses can take the output video from either of the M/E blocks.

## Location and Function of Parts

---

### Transition control section

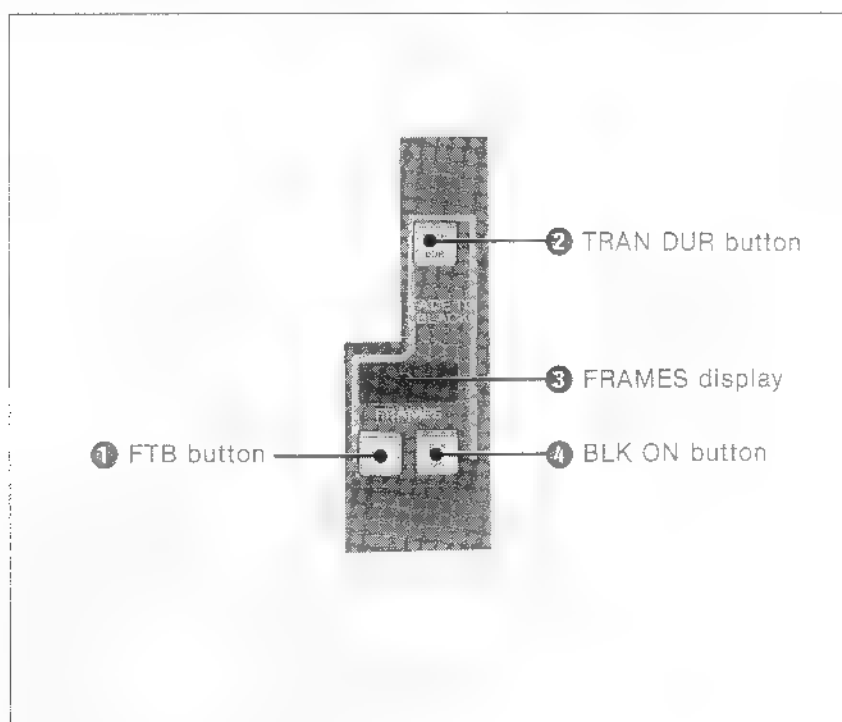
There is no DME button or DUAL button.

### Keying control section

- There is no CHR KEY button.
- Since this bank has only one key bus, there are no key selection buttons.

### FADE TO BLACK section

This function is provided only on the PGM/PST block, allowing fade-outs and fade-ins or instantaneous transitions to and from black for the final program output.



---

❶ **FTB (fade to black) button**

This performs a gradual fade to or from black.

❷ **TRAN DUR (transition duration) button**

Used when setting the duration of the transition.

❸ **FRAMES display**

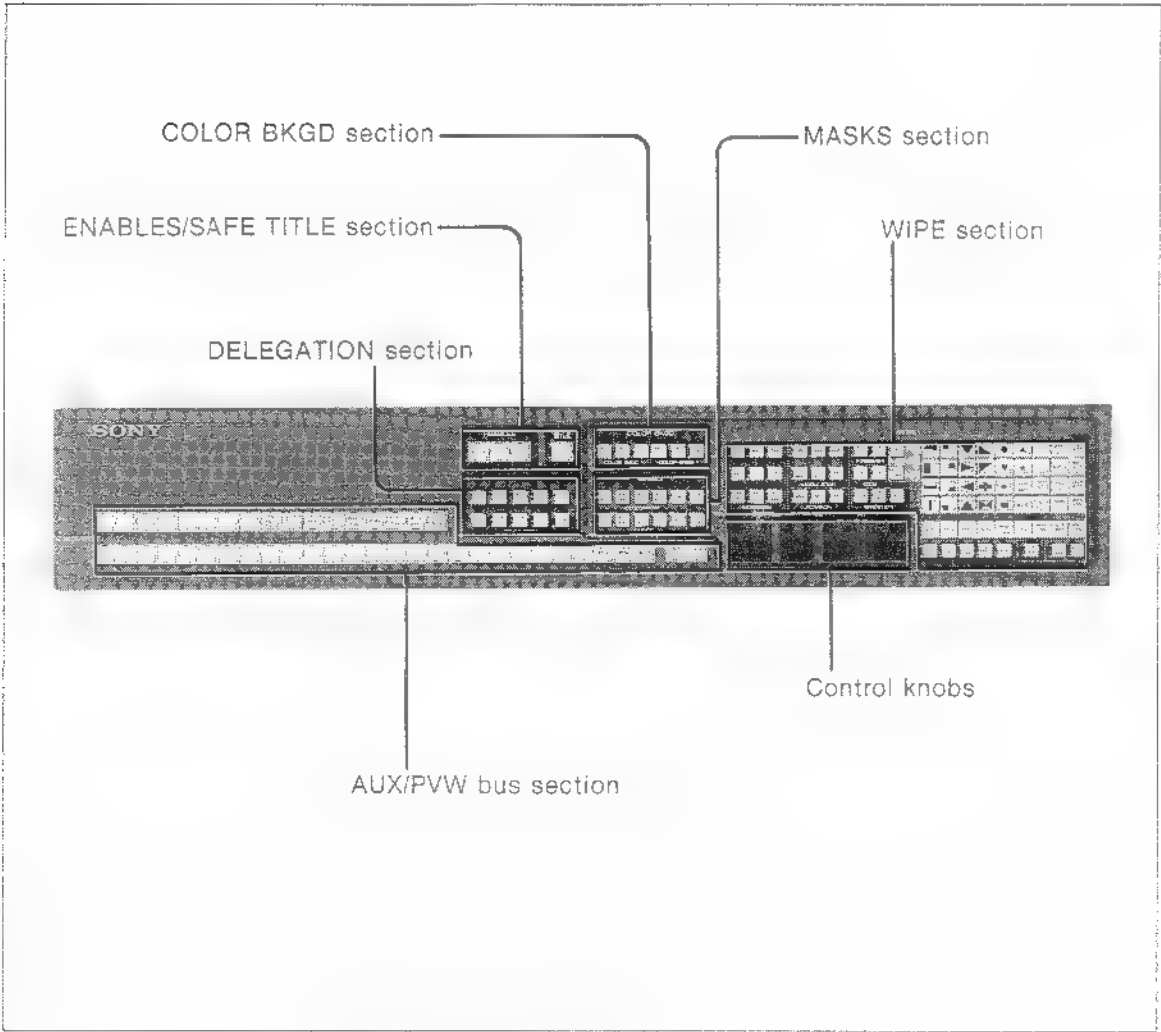
Shows the currently set transition duration in frames.

❹ **BLK (black) ON button**

This performs an instantaneous transition to or from black.  
When the output changes completely to black using either the  
FTB or BLK ON buttons, this button lights red.

Common Control Block

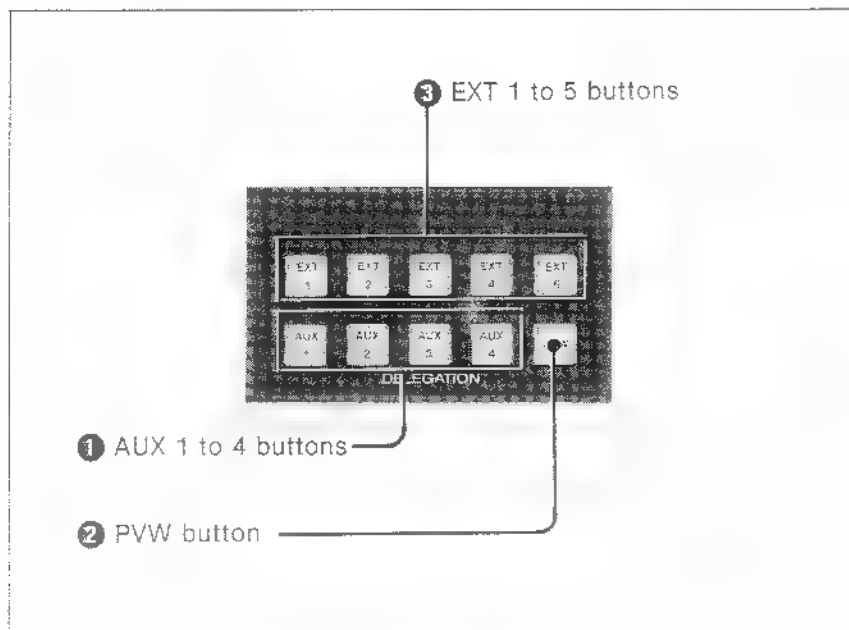
This block is divided into six sections as shown in the photograph.



## AUX/PVW (auxiliary/preview) bus section

This bank of buttons is used for controlling all ten buses. Use the DELEGATION section to specify which bus is controlled.

### DELEGATION section



These buttons select the bus which is being controlled.

#### ① AUX (auxiliary) 1 to 4 buttons

These select the internal AUX buses 1 to 4.

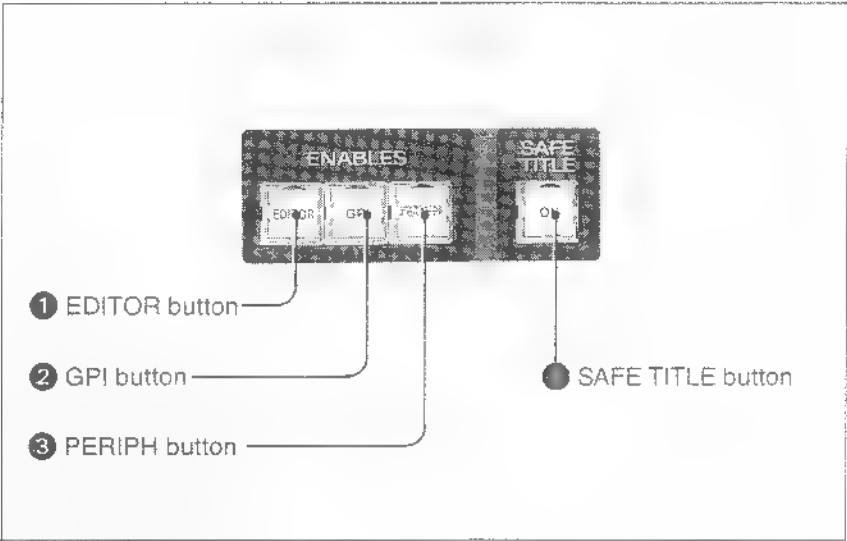
#### ② PVW (preview) button

This selects the EDIT PVW bus.

#### ③ EXT (external) 1 to 5 buttons

These select the external matrix switcher buses 1 to 5.

ENABLES/SAFE TITLE section



➊ **EDITOR button**

When this button is lit, the switcher can be controlled from an external editor connected to the EDITOR connector on the rear panel of the switcher.

➋ **GPI button**

When this button is lit, the GPI connector on the rear panel of the switcher can be used for input and output.

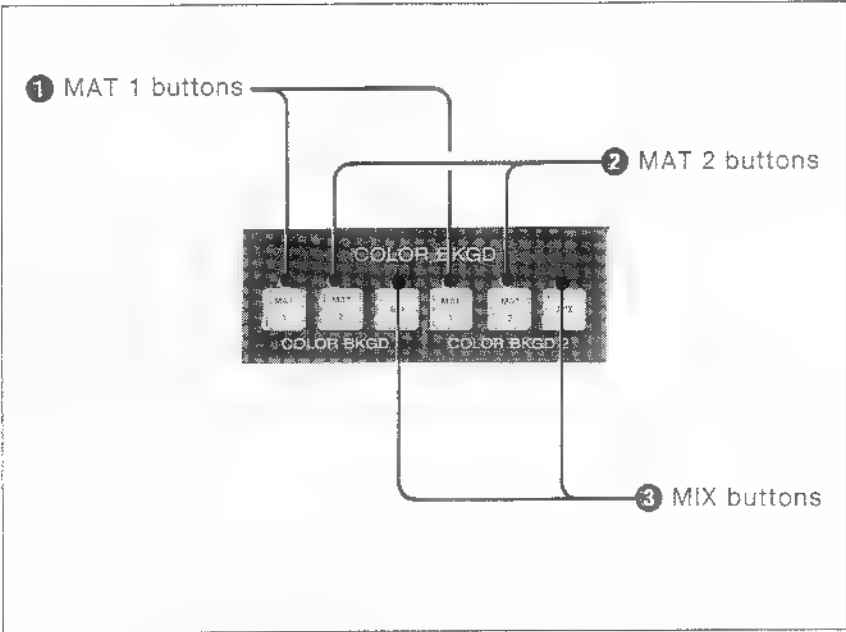
➌ **PERIPH (peripheral) button**

When this button is lit, the internal AUX buses 1 to 4 can be controlled by an external device connected to the DME connector or AUX BUS connector on the rear panel of the switcher.

➍ **SAFE TITLE button**

This superimposes a safe title area and center cross on the preview output from the PGM/PST block. Use it to ensure that titles are within the effective viewing area of a household television set.

**COLOR BKGD (color background) section**



The two sets of buttons in this section produce two color backgrounds (COLOR BKGD 1 and 2), with the following functions for each of the backgrounds.

**1 MAT (matte) 1 button**

A single color background uses the matte 1 color. When it is lit in high tally, the four control knobs adjust its color.

**2 MAT (matte) 2 button**

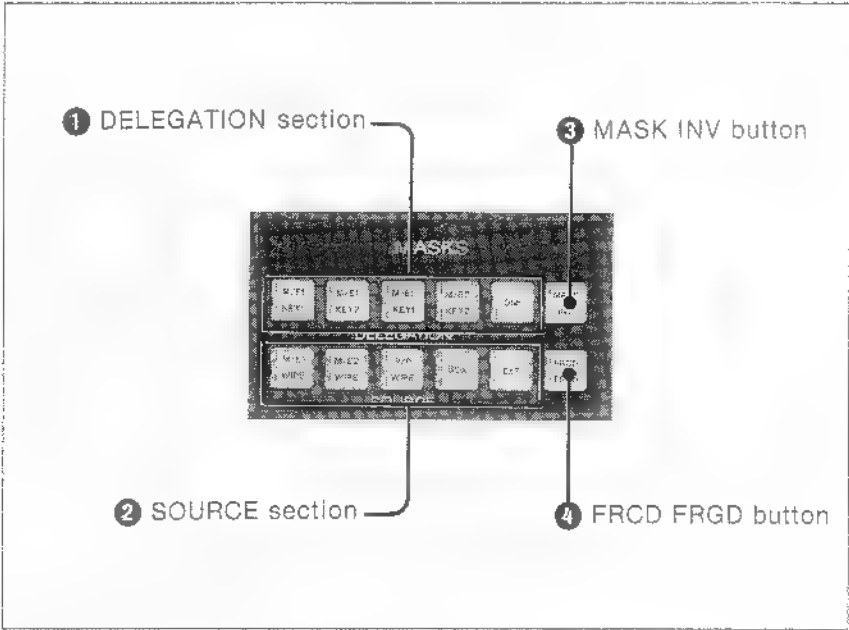
When the MIX button 3 is pressed, this button is lit and the second matte is used as the second color. When it is in high tally, the four control knobs adjust its color.

**3 MIX button**

Press this to get a two-color mix using a wipe pattern.



MASKS section



1 DELEGATION section

This section determines the key for which the mask is being set. DSK indicates the downstream keyer for the PGM/PST block.

2 SOURCE section

Selects the pattern used for the mask. A different mask can be selected from each of the five keys.

**M/E1 wipe button:** Press to use the wipe pattern on the M/E-1 block.

**M/E2 wipe button:** Press to use the wipe pattern on the M/E-2 block.

**P/P wipe button:** Press to use the wipe pattern on the PGM/PST block.

**BOX button:** Press to use a rectangular mask. When lit in high tally, the four control knobs control the positions of the four sides.

**EXT (external) button:** Press to use an external signal selected on the menu system as the mask source.

---

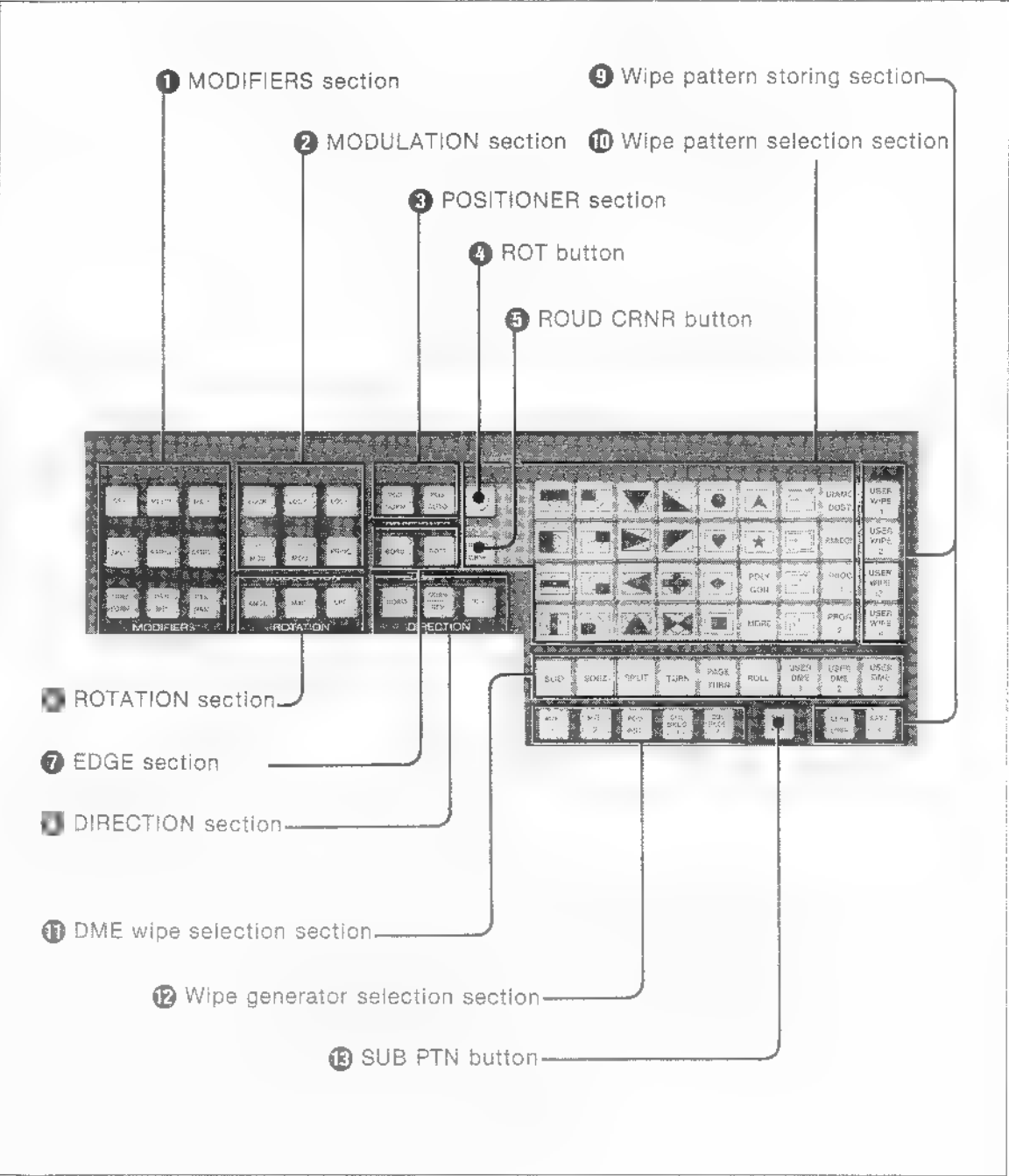
③ **MASK INV (invert) button**

Inverts the mask source.

④ **FRCD FRGD (forced foreground) button**

Forces the foreground (key fill) in the area defined by the mask.

WIPE section



---

### ❶ MODIFIERS section

**ASP (aspect) button:** Changes the aspect ratio of the wipe pattern.

**MULTI (multiplier) button:** Multiplies the wipe pattern in the horizontal or vertical direction.

**PAIR (pairing) button:** Gives the wipe pattern an appearance of a pair of Venetian blinds.

**SPLIT button:** Splits the wipe pattern in forward and reverse directions.

**SPRIG (spring) button:** Gives the impression of a spring welling out.

**SPIRL (spiral) button:** Spiral wipe pattern.

**TRANSFORM (transform) button:** Adjusts the POLYGON, DIAMD (diamond) DUST and MORE patterns.

**PTN (pattern) MIX button:** Mixes two wipe patterns.

**PTN NAM (pattern non-additive mix) button:** Uses a non-additive mix for two wipe patterns.

### ❷ MODULATION section

This section is used to add a sine-wave-shape modulation to a wipe pattern.

**H MOD (horizontal modulation) button:** Adds a modulation in the horizontal direction. If the LOCK button is pressed, the movement stops.

**V MOD (vertical modulation) button:** Adds a modulation in the vertical direction. If the LOCK button is pressed, the movement stops.

**FRINGE button:** Applies fringe modulation (in the direction of radiation). If the LOCK button is pressed, the movement stops.

### ❸ POSITIONER section

Selects the movement of the center of the wipe pattern during the transition.

**POS NORM (position normal) button:** During the transition the center of the wipe pattern does not move.

**POS (position) AUTO button:** With the transition the center of the wipe pattern moves toward the center of the screen.

### ❹ ROT (rotary) button

Gives a wipe pattern like a door opening.

**⑤ ROUD CRNR (round corner) button**

Rounds the corners of the wipe pattern.

**⑥ ROTATION section**

These buttons are used when rotating the wipe pattern.

**ANGL (angle) button:** Used when setting the inclination angle of the wipe pattern.

**MAG (magnitude) button:** Used when setting the amount and direction of rotation of the wipe pattern during the transition.

**SPD (speed) button:** Used when setting the speed of rotation of the wipe pattern.

**⑦ EDGE section**

Selects the edge type for the wipe pattern.

**BORD (border) button:** Applies a border to the edge of the pattern.

**SOFT button:** Gives the edge a soft appearance.

**⑧ DIRECTION section**

**NORM (normal) button:** The wipe moves in the direction shown on the wipe pattern selection button.

**REV (reverse) button:** The wipe moves in the reverse direction to that shown on the wipe pattern selection button.

**NORM/REV (normal/reverse) button:** Alternate transitions go in opposite directions.

**⑨ Wipe pattern storing section**

**USER WIPE 1 to 4 buttons:** User-generated wipe patterns, including modifier effects, can be stored and recalled.

**LERN (learn) USER button:** Press to assign user-generated wipe pattern to the USER WIPE 1 to 4 buttons.

**LAST X button:** Cancels the wipe pattern recalled by the USER WIPE 1 to 4 buttons and restores the immediately previous wipe pattern.

---

#### ⑩ Wipe pattern selection section

The buttons marked with a black and white pattern show the wipe pattern, where the transition moves from the black portion toward the white portion. The arrow(s) and pinhole marked on some buttons with a black and white pattern show the direction and center of the rotary wipe using the corresponding pattern, respectively.

**POLYGON button:** Gives the wipe pattern a regular polygon shape. Using the MODIFIERS section this can be changed to a star shape.

**MORE button:** Gives a choice of 16 patterns other than those shown on the buttons.

**DIAMD (diamond) DUST button:** Fills the wipe pattern with twinkling fine particles.

**RANDOM button:** Gives the wipe pattern like a mosaic with the appearance of tiles scattered all over the screen.

**PROG (program) 1 and 2 buttons:** Using these buttons allows patterns not shown on the panel to be recalled. Assignment of patterns to these buttons is carried out using the menu system.

#### ⑪ DME wipe selection section

When a DME-5000 is connected, these buttons allow effects wipes to be used.

**SLIDE button:** During the wipe transition the next image slides over the top of the current image.

**SQEZ (squeeze) button:** During the wipe transition the current image contracts as the next image expands.

**SPLIT button:** The next image splits the current one.

**TURN button:** The current image turns like a door as it is replaced.

**PAGE TURN button:** Page turn simulation.

**ROLL button:** The current image rolls up like a scroll as it is replaced.

**USER DME buttons 1 to 3:** User-generated effects which have been stored are recalled.

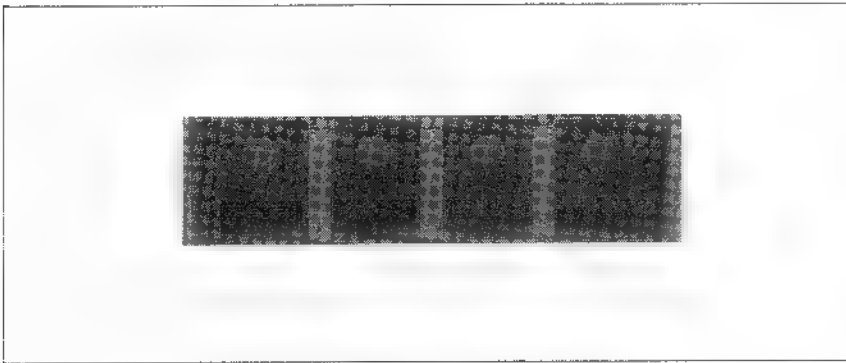
#### ⑫ Wipe generator selection section

These buttons select which of the five wipe generators is being controlled.

**13 SUB PTN (sub-pattern) button**

When either of the pattern mix buttons (PTN MIX or PTN NAM) in the MODIFIERS section is on, the SUB PTN button allows the second pattern (sub-pattern) to be selected.

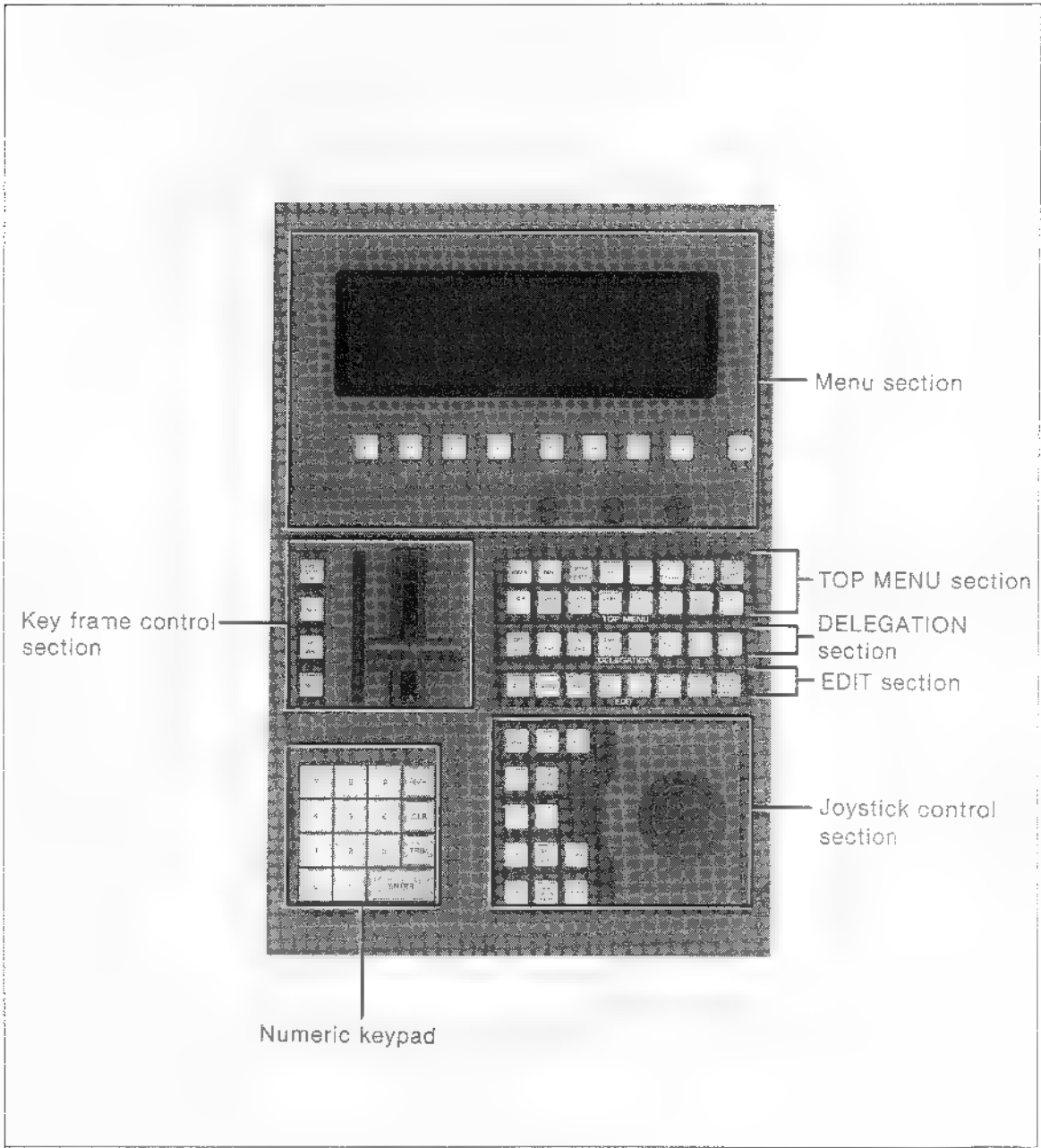
**Control knobs**



These four knobs make adjustments for the button in the WIPE section, COLOR BKGD section or MASKS section which is on in high-tally (green). The display in front of each button shows the initial letter of the function being adjusted, and its current numeric value.

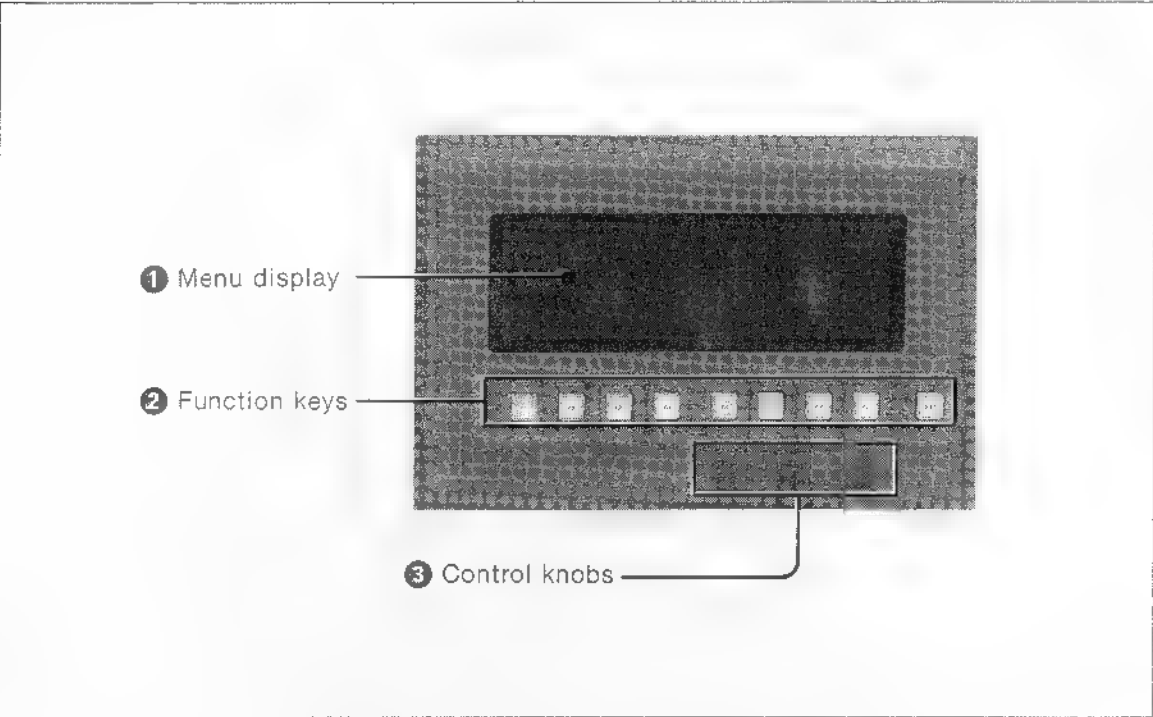
# Menu Control Block

This block is divided into seven sections as shown in the photograph.





Menu section



1 Menu display

Shows the menus, effects parameters, current position of the image being manipulated, and other information.

2 Function keys

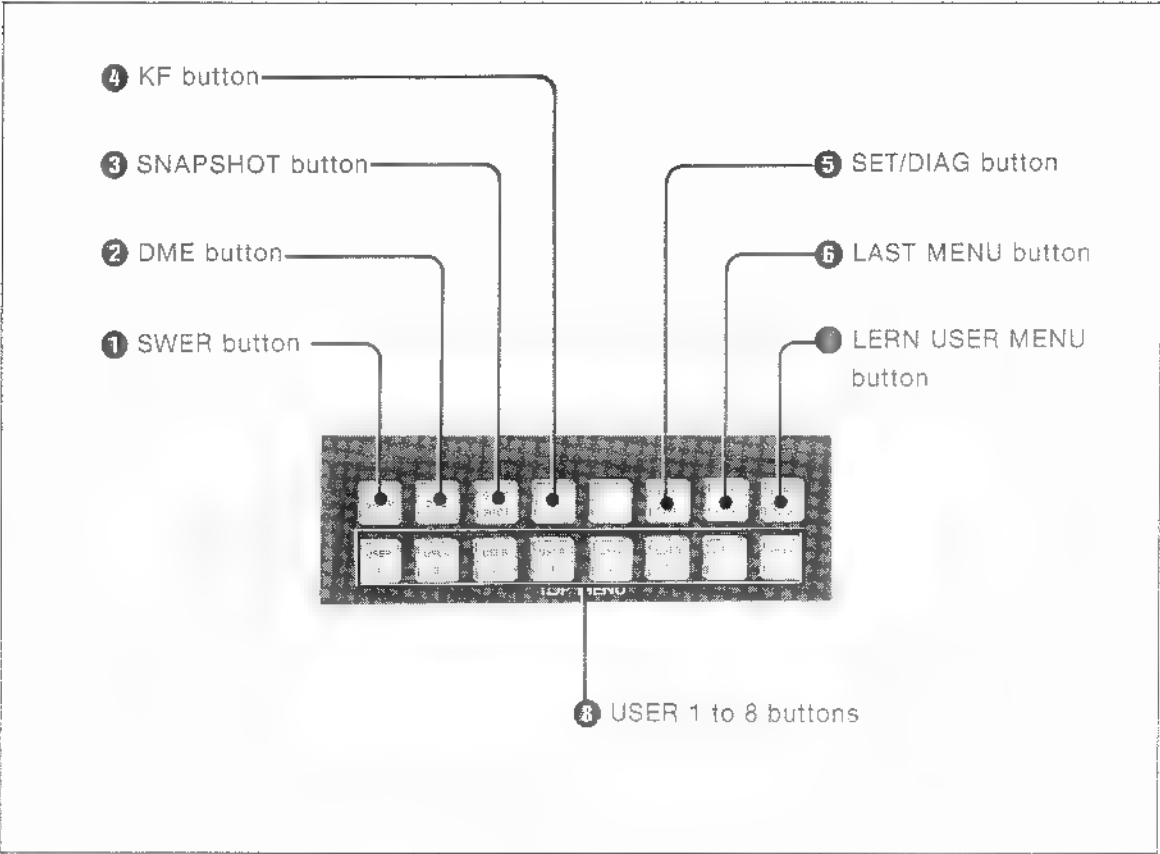
**Buttons F1 to F8:** These correspond to the eight boxes of soft key display at the bottom of the screen, and are used to make selections.

**EXIT button:** This button exits from the current menu, and moves one level up the menu tree. For more details on the menu tree, see the section “Structure of the Menu System” on pages 4-1.

3 Control knobs

These three knobs adjust effects parameters shown on the menu display.

## TOP MENU section



These buttons select a top menu to be displayed.

**1 SWER (switcher) button**

This button gets the SWITCHER menu.

**2 DME button**

This button gets the DME menu.

**3 SNAPSHOT button**

This button gets the SNAPSHOT menu.

**4 KF (key frame) button**

This button gets the EFFECT menu.

**5 SET/DIAG button**

This button gets the SETUP & DIAG (diagnosis) menu.

**6 LAST MENU button**

This button returns to the immediately previous menu.

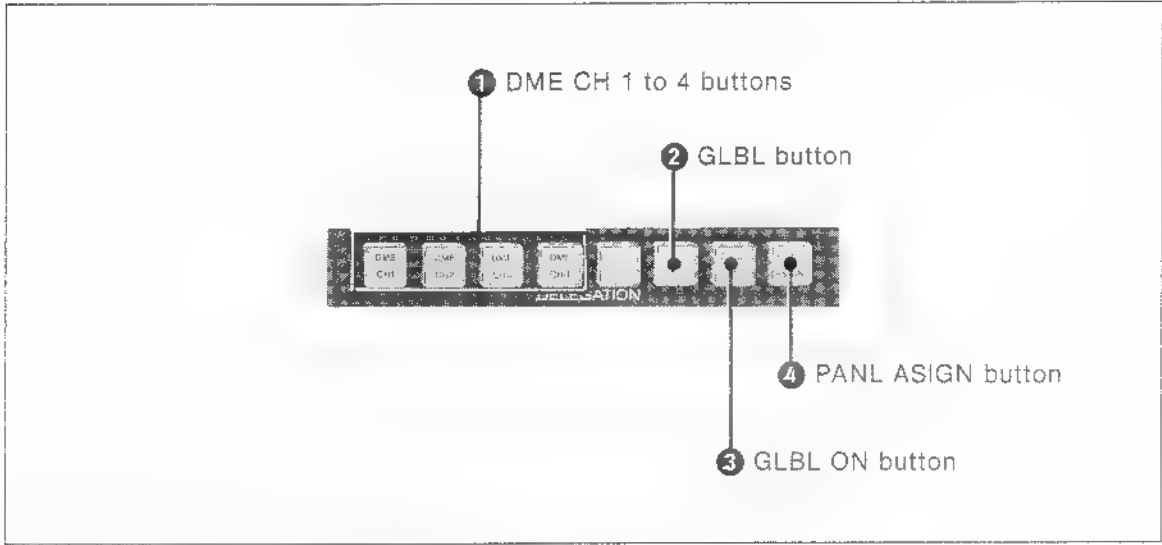
**7 LERN (learn) USER MENU button**

This button is used for assigning ■ menu to the USER 1 to 8 buttons.

**8 USER 1 to 8 buttons**

Any menu can be assigned to and recalled from these buttons.

## DELEGATION section



### ❶ DME CH (channel) 1 to 4 buttons

These buttons determine which of the DME channels is being controlled by the menu, function keys and joystick.

To select more than one DME channel at a time, press the corresponding buttons simultaneously.

The three buttons below are used when operating with more than one DME channel simultaneously.

### ❷ GLBL (global) button

Selects the global channel. The DME channels specified using the menu system (maximum four) can be controlled simultaneously.

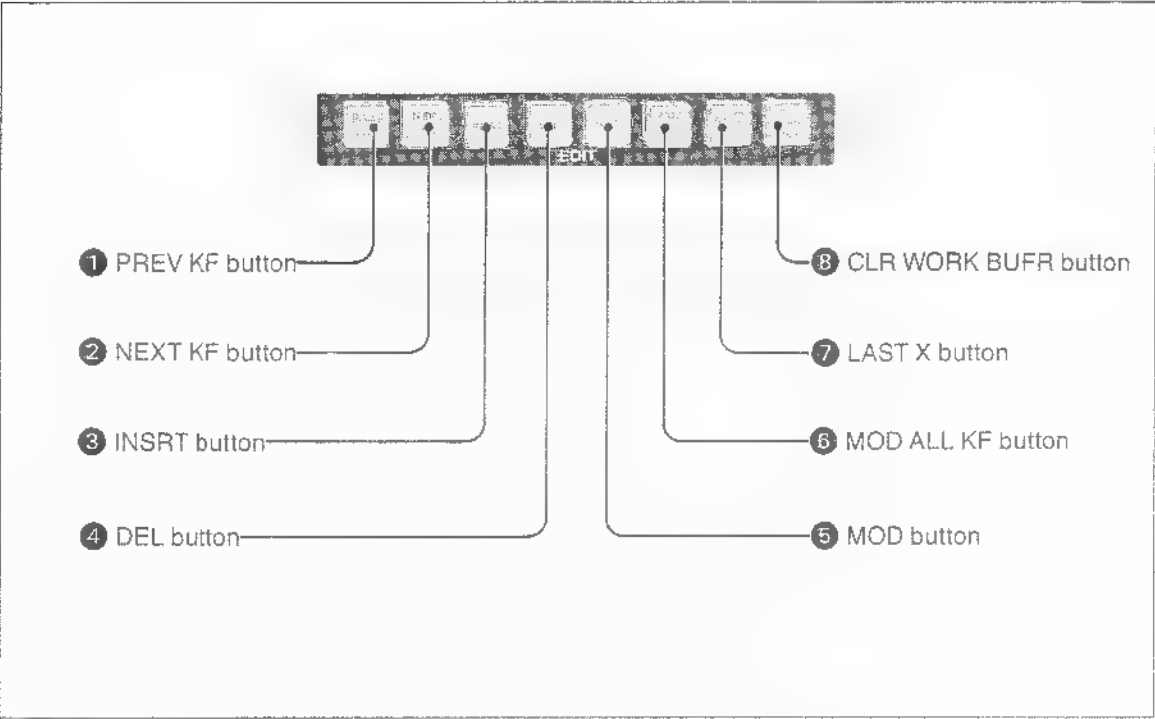
### ❸ GLBL (global) ON button

Turn this button on to use global coordinates.

### ❹ PANL ASIGN (panel assign) button

When more than one DME channel is selected, this button assigns the menu display to a particular channel. To switch the menu display for another channel, press this button, which will light, then press one of the DME channel buttons, which will turn green.

## EDIT section



These buttons are used for key frame editing.

- 1 PREV KF (previous key frame) button**  
Moves the effect from the current key frame back to the previous key frame.
- 2 NEXT KF (key frame) button**  
Advances the effect from the current key frame to the next key frame.
- 3 INSRT button**  
Inserts the current state in front of the current key frame.
- 4 DEL (delete) button**  
Deletes the current key frame.

---

**⑤ MOD (modify) button**

Makes the current state (the state of the work buffer) the current key frame.

**⑥ MOD ALL KF (modify all key frames) button**

Modifies the current key frames whose number is specified.

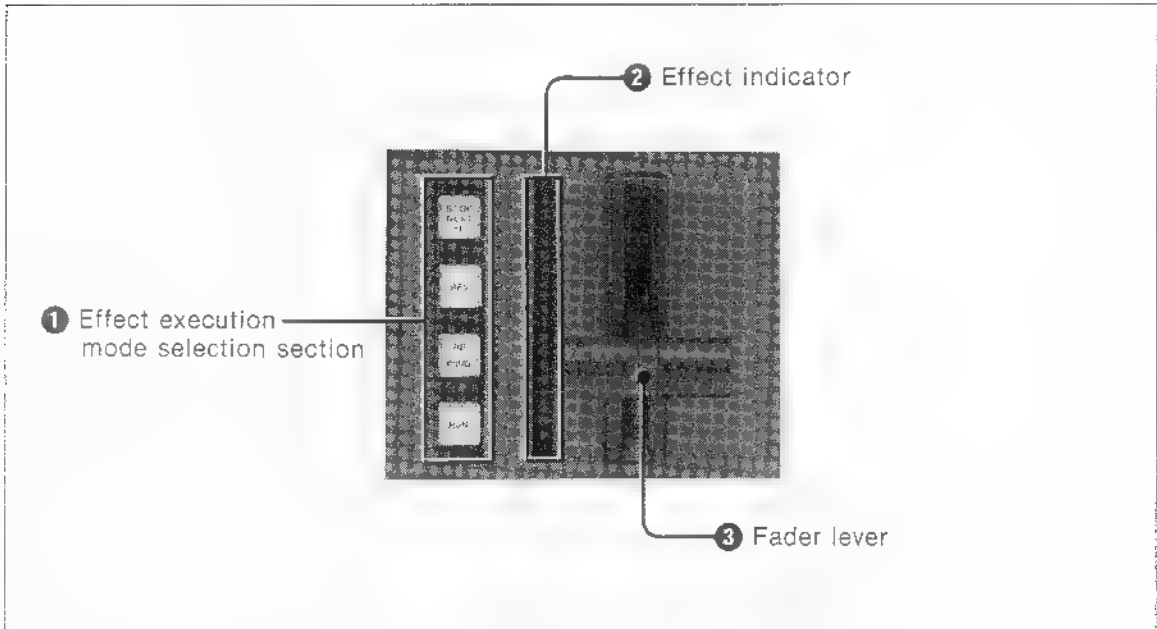
**⑦ LAST X button**

Undoes the effect of a change made by the INSRT, DEL or MOD button.

**⑧ CLR WORK BUFR (clear work buffer) button**

Clears the contents of the work buffer. Pressing this button first clears the transformation parameters. Pressing it again clears the rest of the contents.

## Key frame control section



### 1 Effect execution mode selection section

Select the key frame execution mode.

**STOP NEXT KF (key frame) button:** When this button is on, the effect from one key frame to the next key frame can be carried out using the RUN button or the fader lever.

**REV (reverse) button:** When this button is on, the effect can be carried out in the reverse direction using the RUN button or the fader lever.

**REWIND button:** Move to the key frame at the of the effect which is now recalled. When the reverse button is on, this moves to the last key frame of the effect.

**RUN button:** Carries out the effect automatically, following the execution mode settings.

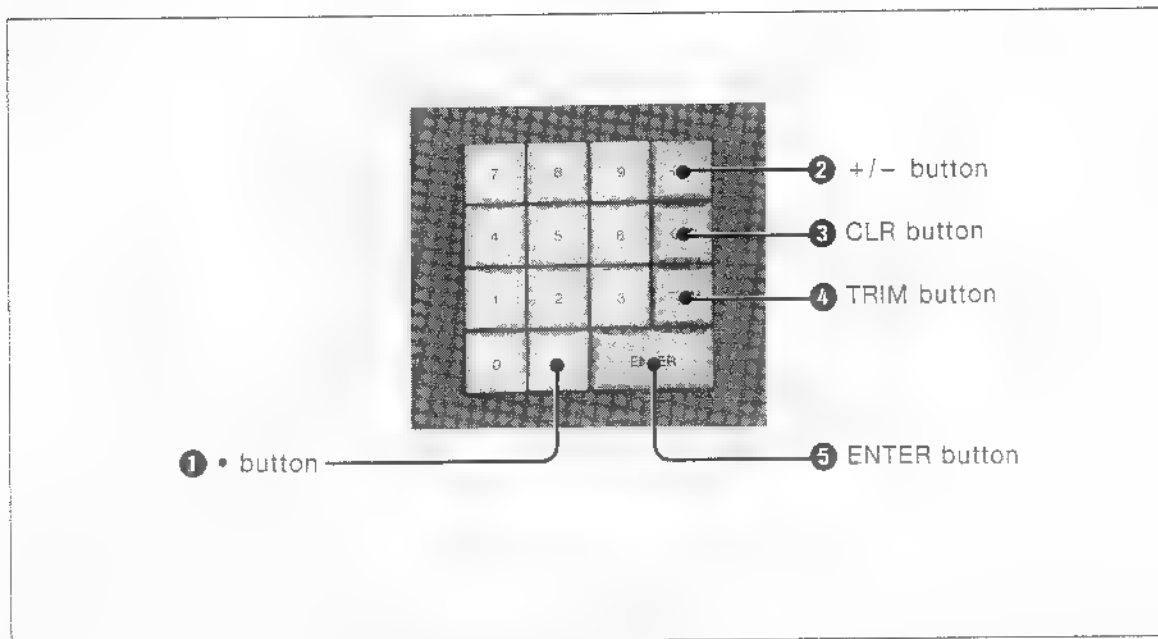
### 2 Effect indicator

This LED strip indicator shows the current position during an effect.

### 3 Fader lever

Used for carrying out the key frame effect manually.

## Numeric keypad



The numeric keypad is used for inputting numeric values such as effects recall values, key frame numbers or switcher transition durations.

### ① • button

Decimal point. This is also used as the separator when entering the time.

### ② + / - button

Reverses the sign of the value. This button can be used both before and after completing the input.

### ③ CLR (clear) button

Clears the input value and restores the immediately previous value.

### ④ TRIM button

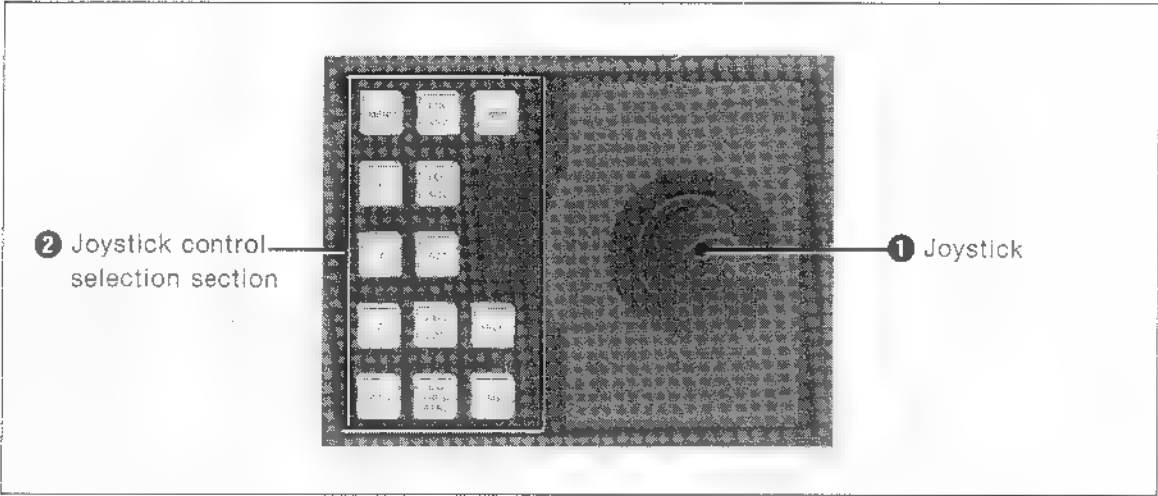
When entering the difference between the current value and the desired value, press this button instead of ENTER.

### ⑤ ENTER button

Press to confirm the input.



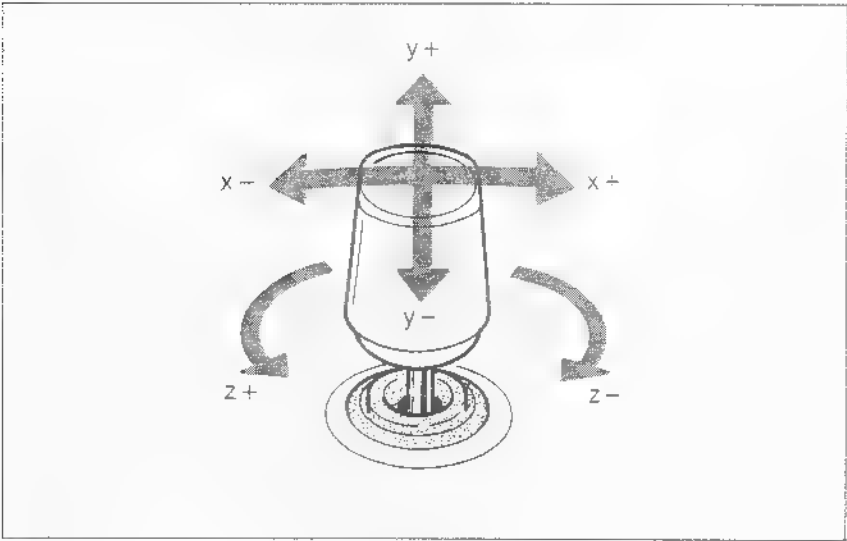
Joystick control section



1 Joystick

The joystick is used for DME control and for wipe pattern adjustments. For DME control, by moving the joystick you can control the x-, y- and z-axes of the source video or target video (the whole picture on the monitor screen).

- Move the joystick to left or right to control the x-axis.
- Move the joystick up or down to control the y-axis.
- Rotate the joystick to control the z-axis.



---

## ② Joystick control selection section

This determines the function controlled by the joystick.

**MENU button:** This allows the joystick to be used in place of the three control knobs under the menu display, adjusting the current values shown on the menu.

- Move the joystick left or right (x-axis): left-hand knob.
- Move the joystick up or down (y-axis): center knob.
- Rotate the joystick (z-axis): right-hand knob.

**X, Y and Z buttons:**

- Pressing one of these buttons produces a menu for the corresponding axis, and allows the value to be input from the numeric keypad.
- If you move the joystick while holding down one of these buttons, the joystick only controls the corresponding axis.

**CTR (centering) button:** Pressing this button causes the value currently being manipulated by the joystick to be set to the closest detent specified by the system. If the button is then pressed a second time, the center (default) value is set. When the menu button or wipe button is lit, however, this button sets the center (default) value the first time it is pressed.

**LOC (locate) XYZ button:** When this button is pressed, operating the joystick moves the picture on the screen.

**LOC (locate) SIZE button:** When this button is pressed, moving the joystick in the z-axis changes the size of the picture on the screen, and moving in the x- and y-axes moves the picture on the screen.

**ROT (rotation) button:** When this button is pressed, moving the joystick rotates the picture.

**AXIS LOC (locate) button:** When this button is pressed, operating the joystick allows the axis of rotation to be oriented to an arbitrary direction.

**ASP (aspect)/SKEW/PERS (perspective) button:** The function of this button depends on which of the SRCE and TRGT buttons is lit, as follows.

- When the SRCE (source) button is lit: Moving the joystick in the x- and y-axes controls the skew of the picture, and moving it in the z-axis controls the aspect ratio.
- When the TRGT (target) button is lit: Moving the joystick in the x-, y-, and z-axes controls the perspective of the picture.

**WIPE button:** When this button is pressed, the joystick acts as the wipe positioner of the switcher, and adjusts the position of the wipe pattern.

**SRCE (source) button:** When this button is pressed, the joystick moves the picture in the x-, y- and z-axes of the source coordinates, or in other words in the relative coordinates with respect to the effect image.

**TRGT (target) button:** When this button is pressed, the joystick moves the picture in the x-, y- and z-axes of the target coordinates, or in other words in the absolute coordinates with respect to the monitor screen.

## Chapter 3

### Switcher Operation

---

Processing the Receive Data ..... 13	13
Radio Switched Channel Operation ..... 14	14
Signal Transmitted Subsystem ..... 140	140
Inserting a Dedicated Port ..... 141	141
Examining a Transmitted Subsystem ..... 142	142
Keying Operation ..... 143	143
Wave Compression ..... 144	144
Full Wave Operation ..... 145	145
Code Backward Operation ..... 146	146
Control Equipment Operation ..... 147	147
Self Test Function ..... 148	148

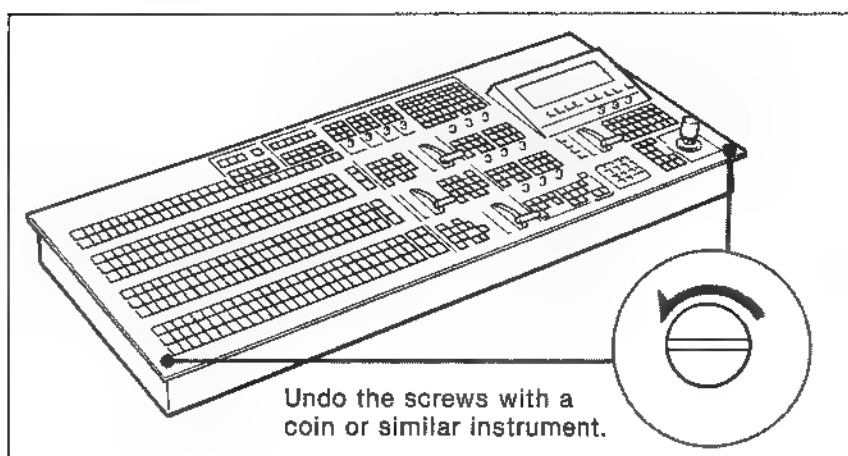
# Switcher Operation

This chapter describes the operation of the DVS-8000/8000C digital video switcher. For details on using the DME-5000 digital multi effects refer to Chapter 5 "DME-5000 Operations".

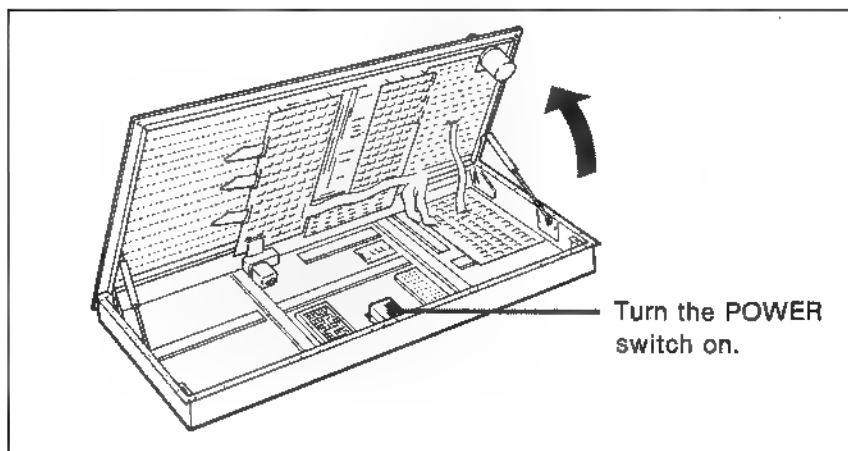
## Powering the System On

To turn the power on, as shown in the figure below, open the upper portion of the control panel and turn on the internal POWER switch.

- 1** First undo the screws at right and left sides of the control panel using a coin or similar instrument.



- 2** Lift up the top of the control panel.



**Basic Switcher Operation**

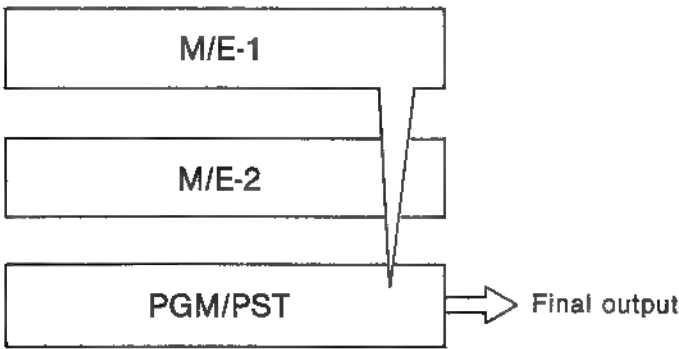
**Video building sequence**

In this system, the M/E-1, M/E-2 and PGM/PST blocks produce separate video outputs. The images from them, when output to the program monitor, are termed the M/E-1 video, M/E-2 video and PGM/PST video.

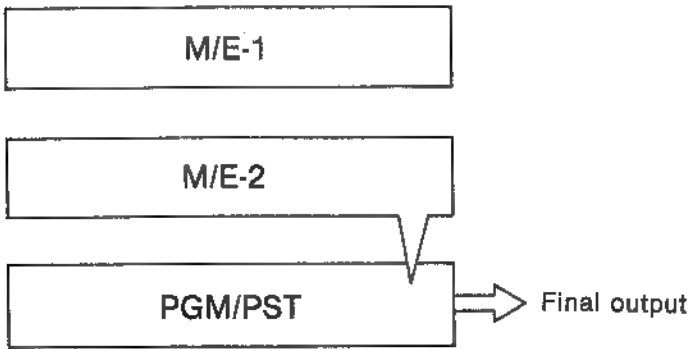
- Either the M/E-1 video or M/E-2 video can be directly input to the other M/E block. The PGM/PST video cannot be used as input, however.
- The PGM/PST block can use both the M/E-1 video and M/E-2 video as inputs. The output from this block is the final output video from the switcher.

There are five different ways of using the M/E blocks in the final output.

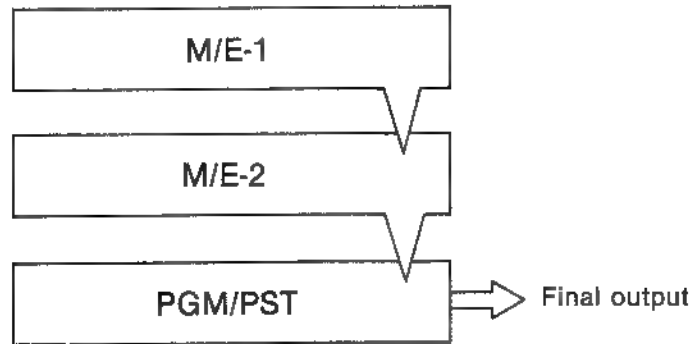
- Using the M/E-1 video to produce the PGM/PST video.



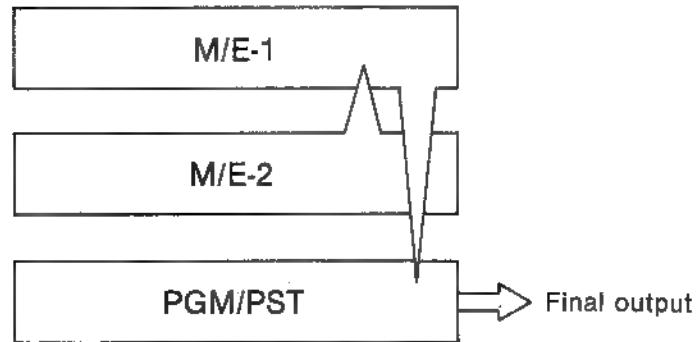
- Using the M/E-2 video to produce the PGM/PST video.



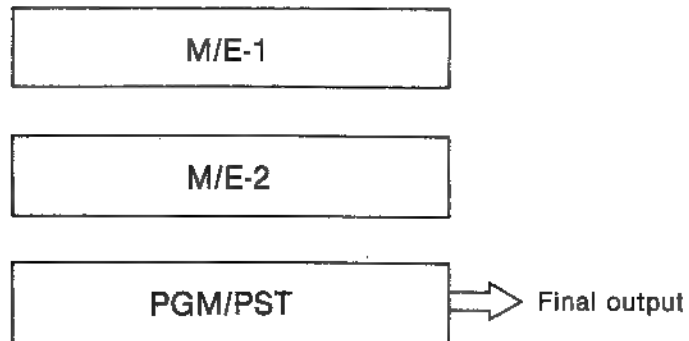
- 
- Use the M/E-1 video to make the M/E-2 video, then use the M/E-2 video to make the PGM/PST video.



- Use the M/E-2 video to make the M/E-1 video, then use the M/E-1 video to make the PGM/PST video.



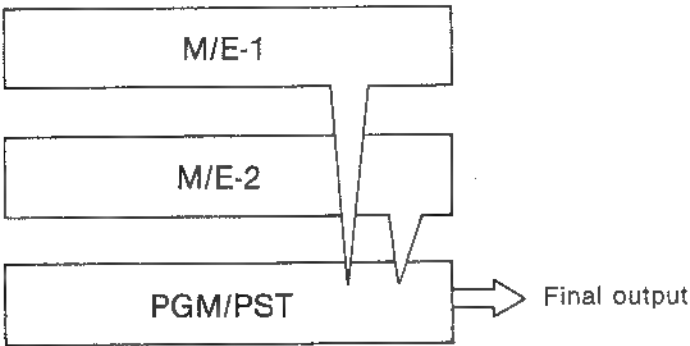
- Make the PGM/PST video without using either the M/E-1 video or M/E-2 video.



# Switcher Operation

---

- Make the PGM/PST video using both the M/E-1 video and M/E-2 video.





---

## How the video output from each video block is made

When the output from each of the M/E-1, M/E-2 and PGM/PST blocks shown on the respective program monitors is switched, this is called a transition. To check the output after the transition, the respective preview monitors can be used. Use the following operating sequence to carry out a transition. The name of the control section to be used is given in parentheses.

- 1** Select the background video which is to be output on the program monitor. (BKGD A bus)  
The selected video is output to the program monitor.
- 2** Specify the component of the video which is to be changed by the transition. (The NEXT TRANSITION section of the transition control section)
  - To change the background, press BKGD.
  - To insert or delete key 1, press KEY 1.
  - To insert or delete key 2, press KEY 2.Two or three of these buttons can be pressed simultaneously. To insert or delete a key on the PGM/PST block, use the KEY button.  
For more details see the section "Next Transition Selection" on pages 3-10 to 3-12.
- 3** Select the video to be used after the transition.
  - Select the background video. (BKGD B bus)
  - Set the key to be inserted. (KEY buses and keying control section)Use the preview monitor to check the result after the transition.  
For more details see the section "Keying Operations" on pages 3-25 to 3-42.

- 4** Select the transition type. (TRANSITION TYPE section in the transition control section)
  - To use a mix to effect the transition, press one of the MIX, SUPER MIX, NAM, or PST BKGD MIX buttons.
  - To use a wipe to effect the transition, press the WIPE button.

For more details see the section “Selecting a Transition Type” on pages 3-13 to 3-16.
- 5**
  - When WIPE is used, set the wipe pattern.  
For more details see the section “Wipe Operations” on pages 3-45 to 3-73.
  - When DME is used, set the type of DME wipe and the wipe pattern.  
For more details see the section “DME Wipe Operation” on pages 3-74 to 3-80.
- 6** Execute the transition. (Transition control section)
  - To make an instantaneous transition, press CUT.
  - For a gradual transition, press the AUTO TRAN button, or use the fader lever.

For more details see the section “Executing a Transition” on pages 3-17 to 3-24.

### Delegation system

For maximum operating functionality the control panel makes some use of a delegation system. This means that some controls can operate on different target signals, and the object of control must therefore be selected before the operation is carried out. Thus a control may operate on more than one bus or more than one wipe generator, as shown in the following table.

Block	Control	Object of control
Common control block	AUX/PVW bus section	AUX 1 to AUX 4 and PVW buses, external matrix switcher buses 1 to 5
	WIPE section	The five wipe generators
	MASKS section	Keys on M/E-1, M/E-2 and PGM/PST blocks
M/E-1 block	KEY buses and keying control section	Key 1 and key 2
M/E-2 block	KEY buses and keying control section	Key 1 and key 2

In the common control block, the AUX/PVW bus section has crosspoint selection buttons which are common to the four AUX buses, the PVW bus, and the five external matrix switcher buses. Select the bus to be controlled by pressing the appropriate button (AUX 1 to 4, PVW, EXT 1 to 5) in the DELEGATION section.

Other delegation functions are described where they occur in the text.

The M/E-1, M/E-2 and PGM/PST blocks each have a set of three control knobs, and the common control block has a set of four control knobs; these are all allocated by a delegation system. For more details, see the paragraph “Control knobs” on page 3-9.

Button indications

In this manual, the buttons are referred to as being lit in high tally or low tally. Both of these indicate that the buttons are lit, but the buttons on the buses and the other buttons have different colors and different meanings for these two functions, as shown in the following table.

Buttons on the M/E-1, M/E-2, PGM/PST and AUX/PVW buses.

State	Color	Meaning
High tally	Red	This is used for making the final program video.
Low tally	Amber	This is not used for making the final program video.

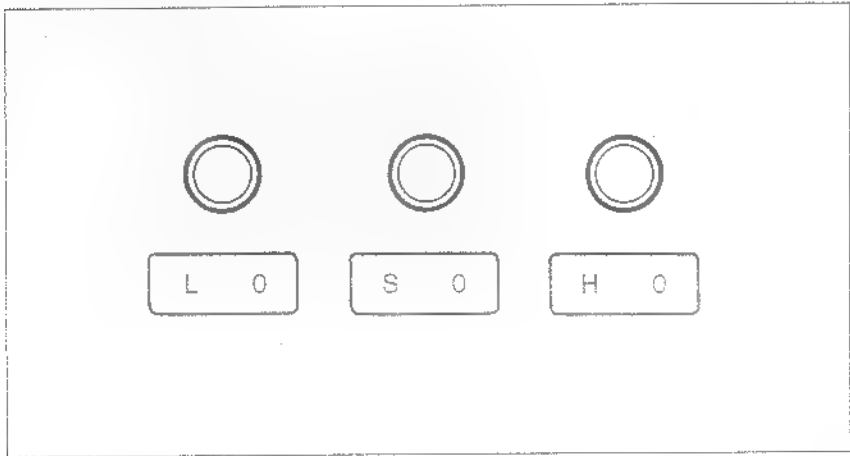
Buttons other than those on the buses

State	Color	Meaning
High tally	Green	This setting can be controlled by the control knobs.
Low tally	Amber	This setting cannot be controlled by the control knobs.

For a button other than a bus button, when pressed in low tally, it changes to high tally, and if pressed in high tally, it goes out.

# Control knobs

The M/E-1, M/E-2 and PGM/PST blocks each have a set of three control knobs, and the common control block has a set of four control knobs; these are all allocated by a delegation system. Within each of these four blocks of controls, when one of the buttons not on a bus is lit in high tally, the displays in front of the corresponding control knobs in the same block will show the items and values of setting or settings corresponding to this button. In other words the control knobs are delegated to this button. In the example below, there are three settings corresponding to the button, but for some buttons there may be fewer than this.



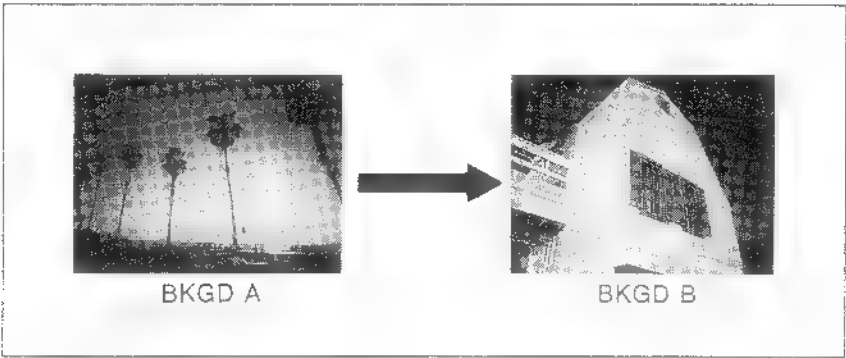
Control knobs and displays

Each display shows the initial letter of the quantity it controls, and the numerical value up to three digits. In the example shown, the knobs control luminance (L), saturation (S) and hue (H), from left to right, and the values are all currently zero. Note that the numeric value shown is always the current value, and it may also include a minus sign.

Next Transition Selection

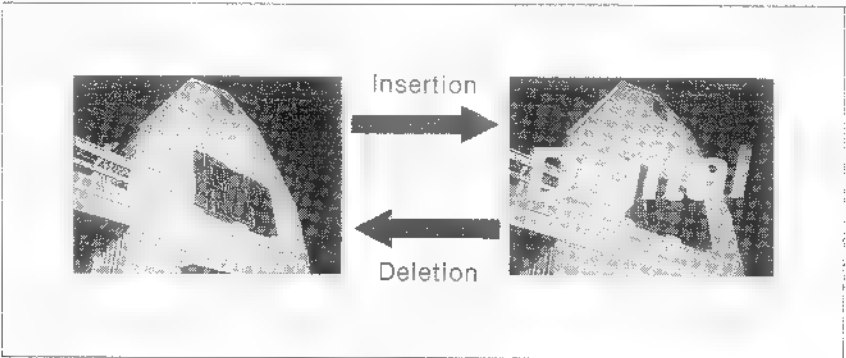
Executing a transition affects the background, key 1 and/or key 2 on the M/E-1, M/E-2 and PGM/PST blocks. (The PGM/PST block has only one key.) Before executing a transition, it is necessary to select which portion of the video currently output to the program monitor the next transition will affect. This is determined by using the buttons in the NEXT TRANSITION section of each block.

Changing the background



To select background transition  
Press the BKGD button which will light.

Inserting or deleting key 1



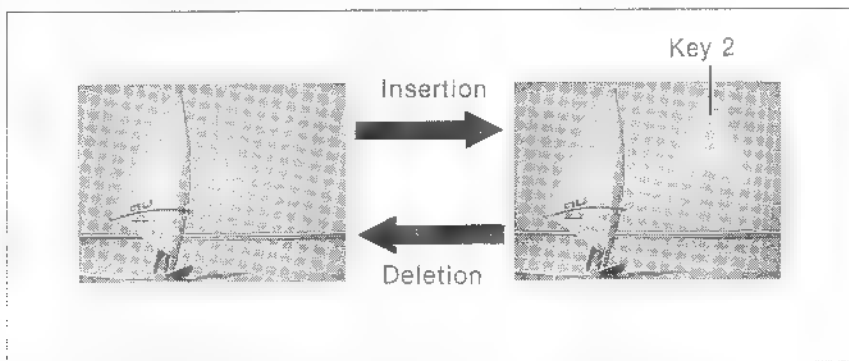
### To select key 1 insertion

With the ON indicator above the KEY 1 button off to show that the key 1 is not currently output to the program monitor, press the KEY 1 button which will light.

### To select key 1 deletion

With the ON indicator above the KEY 1 button lit to show that the key 1 is currently output to the program monitor, press the KEY 1 button which will light.

## Inserting or deleting key 2



### To select key 2 insertion

With the ON indicator above the KEY 2 button off to show that the key 2 is not currently output to the program monitor, press the KEY 2 button which will light.

### To select key 2 deletion

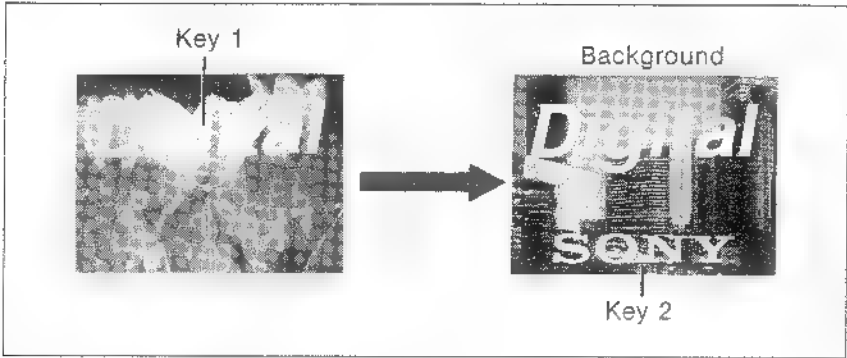
With the ON indicator above the KEY 2 button lit to show that the key 2 is currently output to the program monitor, press the KEY 2 button which will light.

A key insertion and deletion can also be performed using the KEY ON buttons in the keying control section. For more details, see the paragraph "Inserting and deleting keys" on page 3-44.

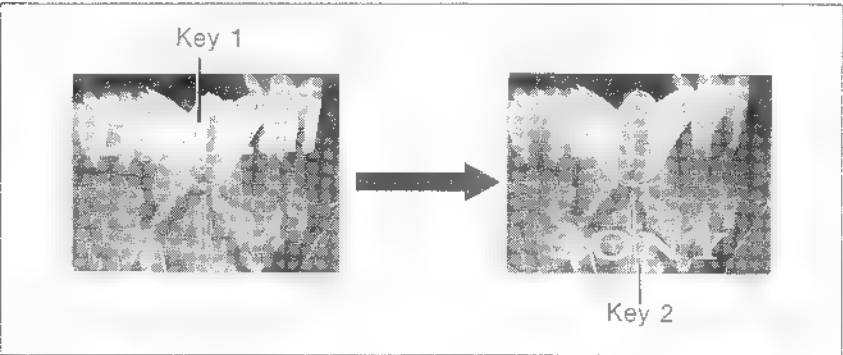
Changing background and keys simultaneously

Pressing two or more buttons in the NEXT TRANSITION section simultaneously affects the background, key 1 and key 2 at the same time. The examples below are the two of the many possible combinations.

- Background transition and key 2 insertion



- Key 1 deletion and key 2 insertion





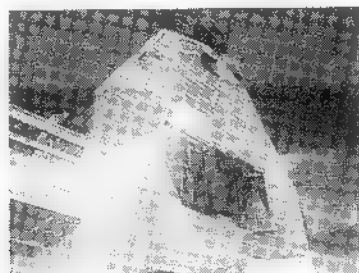
---

## Selecting ■ Transition Type

Transition can be either gradual (a mix or a wipe) or instantaneous (a cut). Before executing a mix or wipe transition, it is necessary to select a transition type using the TRANSITION TYPE section buttons and PST BKGD MIX button in the transition control section. On how to execute a cut, see the next section “Executing a Transition”. In this section of the manual, the old image refers to the video currently output to the program monitor and the new image refers to the video currently output to the preview monitor.

### Mix

As the old image changes to the new image, the two images temporarily overlap. The total output level of the two images remains constant and as the transition progresses, the ratio between the two outputs changes. If the fader lever is moved to the middle of its range, output level of each video is 50%. This type of transition can also be used for a key insertion or deletion.

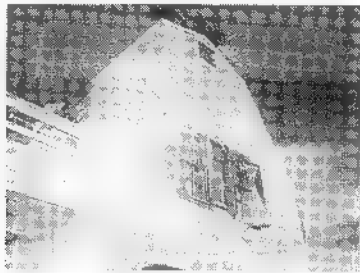


#### To select a mix

Press the MIX button which will light.

## Super mix

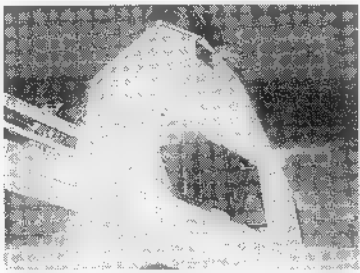
This is a special mix in which the old image maintains the output level of 100% during the first half of the transition as the new image fades in overlapping the old image. With the fader lever at the middle of its range, output level of the both images is 100%. During the second half of the transition, the new image remains constant and the old image fades out. This type of transition cannot be used for a key insertion or deletion.



**To select a super mix**  
Press the SUPER MIX button which will light.

## Non-additive mix (NAM)

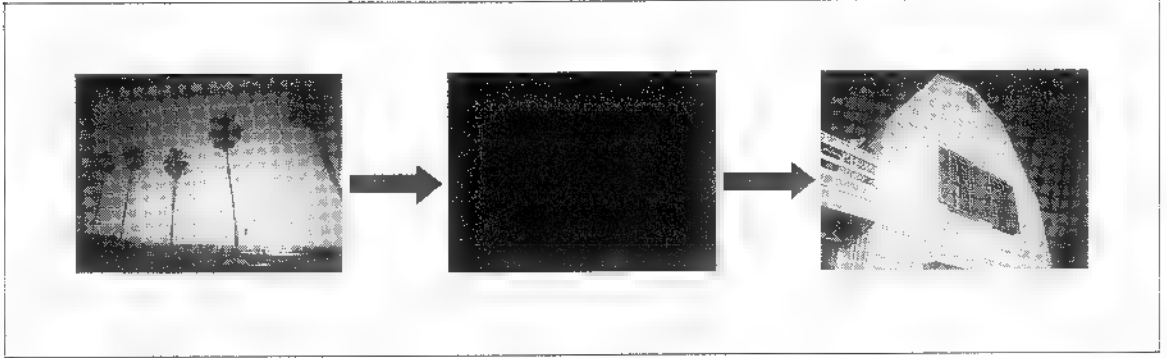
This is a mix in which the signals of the old and the new images are compared and the signal with the higher luminance level is output. It cannot be used for a key insertion or deletion.



**To select ■ non-additive mix**  
Press the NAM button which will light.

## Preset background mix

This is a two-stage mix or cut. In the first transition the entire picture changes to the black or color background, which in turn changes to the new image in the second transition.



### To select ■ preset background mix

Press the PST BKGD MIX button which will light and the MIX button in the TRANSITION TYPE section will come on automatically. In this state, other transition types cannot be selected. After the second transition, the PST BKGD MIX button automatically goes off.

### To select a color of the preset background

Color background 1, 2 or black can be assigned to the preset background using the OPERATION MODE menu (see page 9-10).

## Wipe

This is a transition in which the old image is wiped off gradually and replaced by the new image using a selected pattern. For more details, see the section “Wipe Operations” on pages 3-45 to 3-73.

### To select ■ wipe

Press the WIPE button which will light.

## DME wipe

With a DME-5000 connected to the switcher system, DME effects can be used for a wipe transition. For more details, see the section “DME Wipe Operations“ on pages 3-74 to 3-80.

---

## Executing a Transition

There are two methods of executing a transition: either by an auto transition, or by using the fader lever (manual transition). It is also possible to combine both methods.

### Auto transition

Using the buttons in the auto transition section, there are two types of change.

#### Instantaneous transition

Press the CUT button.

#### Gradual transitions

Press the AUTO TRAN button. A mix or wipe will be carried out, with the transition duration indicated in the FRAMES display. Pressing this button during the transition will halt it temporarily, and if the button is then pressed again, the transition will continue.

While the AUTO TRAN button is lit (during the transition or while the transition is halted), pressing CUT will instantaneously complete the transition.

### Setting the transition duration

Set the duration of transitions to be carried out with the AUTO TRAN button using the following procedure.

- 1** Press the TRAN DUR button which will light.  
The menu display will show a pop-up window for entering values.
- 2** Using the numeric keypad in the menu control block, enter the transition duration expressed in frames.
- 3** Press ENTER on the numeric pad.  
The TRAN DUR button will go off, the set value will be shown on the FRAMES display, and this completes the setting.

**Example:** To set a duration of sixty frames.

Press TRAN DUR, 6, 0, and ENTER, in sequence.

### Fine adjustment of the transition duration

To make a small adjustment in the current setting of the transition duration, use the following procedure.

- 1** Press TRAN DUR.
- 2** Using the + / - button on the numeric keypad, specify whether the current duration is to be increased (+) or decreased (-).  
Each press of the button switches the sign between + and -.
- 3** Enter the number of frames by which it is to be adjusted.
- 4** Press the TRIM button.  
The adjusted number of frames will be displayed, and this completes the setting.

**Example:** To reduce the current setting by five frames.

Press TRAN DUR, + / -, 5, TRIM in sequence.

---

## Manual transitions

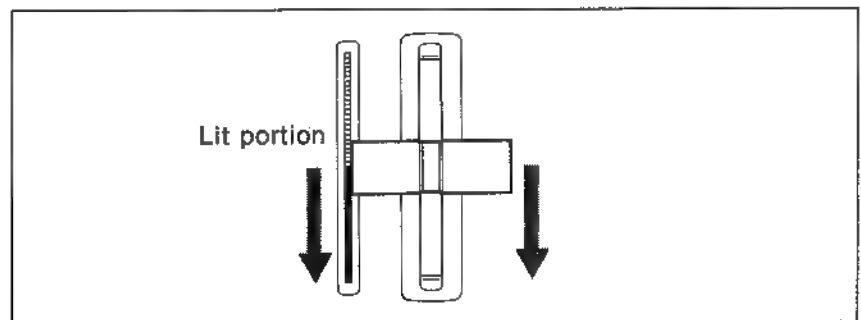
Use the fader lever to carry out a mix or wipe transition manually.

**To complete the transition:** Move the lever from one end of its range to the other. If the lever is then moved back in the reverse direction, this will provide a reverse transition.

**To pause in the middle of a transition:** Move the lever part way, then stop. Moving the lever again will resume the transition.

## Transition progress indication

Whether a manual transition or an auto transition, the transition indicator to the left of the fader lever shows the current state of progress of the transition.



In the case shown in the figure, the LED indicator shows that the transition has proceeded a little over half way from the top to the bottom. When the transition is completed, the indicator goes off.

### Combining an auto transition with a manual transition

In a single transition, the following combinations are possible.

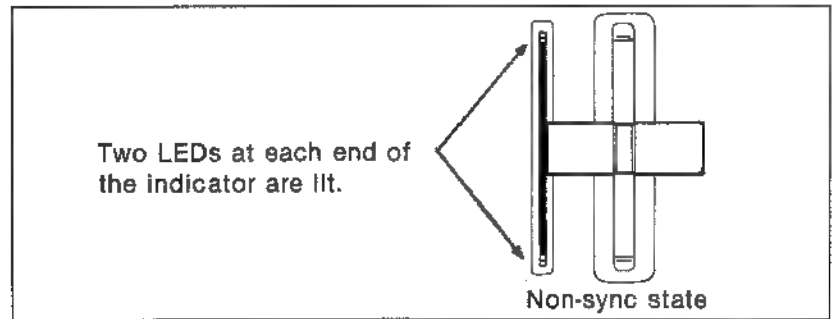
#### **Changing from auto transition to manual transition**

If a transition is started by pressing the AUTO TRAN button and while it is in progress the fader lever is moved, then at the instant the lever position catches up with the transition state, the auto transition control is released, and the AUTO TRAN button goes off. From this point, the fader lever controls the transition.



### Changing from manual transition to auto transition

- If the fader lever is moved part way, pressing the CUT button completes the transition instantaneously.
- If the fader lever is moved part way then stopped, pressing the AUTO TRAN button will continue with an auto transition. In this case the duration of the partial auto transition will be the same as if the auto transition were simply continuing from this point. Therefore if the duration is set to one hundred frames, and the fader lever has advanced as far as twenty-five frames of the transition, the remaining auto transition will occupy seventy-five frames.
- If the fader lever is moved part way then stopped, and the transition completed as an auto transition, the position of the lever will no longer correspond with the state of the transition. This is termed a “non-sync state”, and in this state the transition indicator will be as shown in the figure below.



In the non-sync state, moving the fader lever will not affect the transition. To use the fader lever again, first move it to either the top or the bottom limit of its range. When the non-sync state is released, the indicator will go off.

Note that the non-sync state does not affect use of the AUTO TRAN button to execute an auto transition. The indicator will show the auto transition occurring, and then revert to indicating the non-sync state.

Fader lever operation in bus-uniterchangeable mode

When the BUS Toggle setting in the OPERATION MODE menu is off, the switcher operates in bus-uninterchangeable mode. (See page 9-10)

In this mode there is a fixed relationship between the position of the fader lever and the signal output on each bus. The fader lever must therefore always be moved in the same direction, as shown in the following table, to effect a transition.

Transition	Direction	Fader lever movement
Background	BKGD A → BKGD B	Downward
	BKGD B → BKGD A	Upward
Keys 1 and 2	On → Off	Downward
	Off → On	Upward

- When the transition affects two or more of key 1, key 2 and the backgrounds, the transition cannot be effected unless all are in accordance with the table above.
- If, because of an auto transition for example, the fader lever position becomes out of synchronization with the signal outputs as indicated in the table, the fader lever must first be moved to the correct position before it affects the transition state. This movement (“non-sync movement”) has no effect on the video output.

Notes

- A preset background mix cannot be carried out in bus fixed mode.
- In bus-uninerchangeable mode, carrying out a transition preview may require a non-sync movement of the fader lever. For details see “Transition Preview” on the next page.

---

## Transition preview

You can preview a mix or a wipe using the transition section by the following procedure.

### Carrying out a transition preview

- 1** Press TRAN PVW, which will light.  
The fader lever now only controls the preview output. The program output will be the video before the transition if the fader lever has been moved part way. The preview output will be the same as the program output before the TRAN PVW button was pressed.
- 2** Press AUTO TRAN or move the fader lever.  
You will be able to check the transition on the preview monitor. When the transition is completed, the TRAN PVW button automatically goes off.

### Notes

In bus-uninterchangeable mode, when the TRAN PVW button is on, the action of the fader lever depends on its position, as follows.

- When the fader lever position does not agree with the actual program output position, a non-sync movement is required, to move the fader lever to the correct position. Thereafter the fader lever controls the transition preview.
- If the fader lever is already in the correct position, no non-sync movement is required.

### Ending a transition preview halfway

Press TRAN PVW, which will go off.

### Fade to black

The PGM/PST block has a fade function for the current program output. Use the FADE TO BLACK controls as described below.

Note that the fader lever cannot be used for this transition.

#### To fade out to black

- 1** Press TRAN DUR.
- 2** Input the transition duration on the numeric keypad.
- 3** Press the FTB button.  
The current video will fade to black. Pressing the button again during this transition will carry out the transition in the reverse direction. When the transition is completed, the BLK ON button shows red.

#### To fade in from black

When the output is black, press FTB, having adjusted the transition duration as required.

#### To cut to black

Press the BLK ON button and the video will cut instantaneously to black and the BLK ON button will show red.

To restore the picture, press BLK ON button again.

---

## Keying Operations

A key is a video effect in which a hole is cut in background video, and that hole is filled with a different video image or titling characters. The signal which cuts the hole in the background is termed the key source, and the signal which fills the hole thus cut is termed the key fill. A component of the system which carries out key processing is termed a keyer.

### Overview of keying operations

#### Keying operations on the M/E blocks

The M/E-1 and M/E-2 blocks each have two keyers, but the two keyers share a common set of controls. Therefore each of these M/E blocks has a delegation function to determine which of the keyers is being controlled. For example, when inserting both key 1 and key 2 on either of the M/E blocks, use the following procedure.

- 1** Delegate the keying control section to key 1. (KEY 1 SEL button)
- 2** Set up key 1.
  - Select key type (TYPE section)
  - Select key source (SOURCE section)
  - Select key fill (FILL section)
  - Set key source inversion (KEY MOD section)\*
  - Set key mask (KEY MOD section)\*
  - Select key border (BORDER section)\*
  - Set key border modifications (BORD MOD section)\*

\* These operations only as required
- 3** Delegate the keying control section to key 2. (KEY 2 SEL button)
- 4** Set up key 2, using the same method as for key 1.
- 5** Set which of the two keys is to be on top. (KEY OVER button)

### **6** Insert key 1 and key 2. (KEY ON button)

This step can also be carried out using the transition control section. See the paragraph “Inserting and deleting keys” on page 3-44.

#### **Keying operations on the PGM/PST block**

The PGM/PST block has only one keyer, the downstream keyer, which is the final key processing stage before the video signal leaves the switcher. The downstream keyer controls differ from the keying control section for the M/E blocks in the following ways.

- No delegation function is required.
- Chroma keying is not available.

Keying operations on the M/E blocks are now described in detail.

#### **Keying control section delegation**

For the M/E-1 and M/E-2 blocks, it is first necessary to delegate the keying operations and the key bus control to one of the two keys.

- Press KEY 1 SEL to delegate to key 1.
- Press KEY 2 SEL to delegate to key 2.

## Selecting the key type

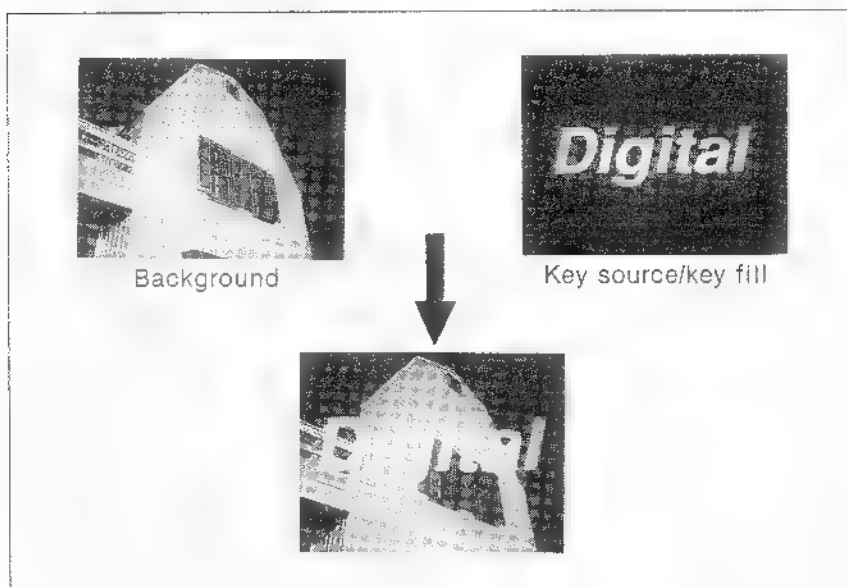
The key type refers to the method of processing the key source signal which cuts a hole in the picture. Use the buttons in the TYPE section to choose one of the following.

### Using luminance keying

- In the DVS-8000, luminance keying uses the Y signal after filtered as the key source to cut a hole in the background and fills the hole with the key fill signal.
- In the DVS-8000C, the Y signal of the key source is used to cut a hole in the background and the entire key fill video is simply mixed with the background to fill the hole with the key fill; this is called “clean key”.

### Notes

- If your switcher is a DVS-8000C, replace the button ID label (or switch chip) “LUM KEY” with the label “CLN KEY”. On how to replace button ID labels, refer to the “How to install the unit” section in the maintenance manual supplied with the control panel, beginning on page 1-4(E).
- Use of DVS-8000C’s clean key function requires that the key fill video excluding its portion to fill the hole cut in the background be black. Otherwise, the other part of the background than the cut hole will be “contaminated” with the key fill video in consequence of the mixing.



- 1** Press LUM KEY, which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control C (clip) adjusts the luminance clipping level. The hole is cut where the key source signal is above this clipping level.
  - Control G (gain) adjusts the gain of the key source amplifier.  
The higher the gain, the sharper the edge of the key.
  - Control D (density) adjusts the density of the key.  
The lower the density, the more the background shows through the key.

### Using linear keying

In DVS-8000 linear keying, the hole is cut according to the key source signal including the chroma component. Note that the range of the gain in this keying is narrower than in luminance keying.

In DVS-8000C linear keying, the hole is cut according to the level of the Y signal of the key source.

- 1** Press LIN KEY, which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control C (clip) adjusts the video signal clipping level.  
The hole is cut where the key source signal is above this clipping level.
  - Control G (gain) adjusts the gain of the key source amplifier.  
The higher the gain, the sharper the edge of the key.
  - Control D (density) adjusts the density of the key.  
The lower the density, the more the background shows through the key.

### Using chroma keying

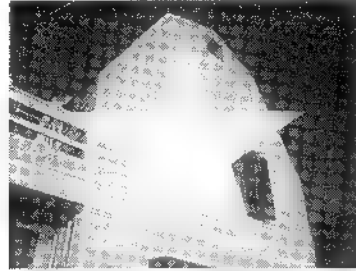
In chroma keying, the key source signal cuts a hole everywhere that the signal corresponds to a standard hue (usually blue), and the key source signal itself is used as key fill signal. (This is termed self-keying).

To carry out chroma keying, it is necessary to install the BKDS-8030/8031 option board for chroma keying in the switcher. For more details on chroma keying operations, refer to the manual supplied with the option board.



### Using pattern keying

In pattern keying, a wipe pattern is used as the key source signal.



**1** Press the PTN KEY button which will light in high tally.

**2** Adjust the control knobs as follows.

- Control C (clip) adjusts the size of the pattern key.
- Control G (gain) adjusts the softness of the key edge.
- Control D adjusts the density of the key video.  
The lower the density setting, the more the background shows through the key video.

### Selecting the wipe pattern used

- Use the MODIFIERS section, MODULATION section, ROTATION section, and POSITIONER section buttons in the WIPE section to select the wipe pattern. Note that the DIRECTION section, SOFT button in the EDGE section and the MAG button in the ROTATION section cannot be used for this purpose.
- For each of the M/E-1, M/E-2 and PGM/PST blocks, only one wipe pattern can be used in a transition. Therefore, the same wipe pattern must be used for the pattern keys of key 1 and key 2, and the wipe. (Note that only one key can be used with the PGM/PST block.)

### Selecting the key fill video

Key fill video is inserted in the hole cut by the key source video. Use the buttons in the FILL section to select it as follows.

#### Matte signal

- 1** Press the MAT button, which will light in high tally. Each keyer has a matte generator which produces the fill signal.
- 2** Adjust the control knobs as follows.
  - Control L adjusts the luminance.
  - Control S adjusts the saturation.
  - Control H adjusts the hue.

#### Key bus signal

Press the KEY BUS button.

The signal currently selected on the key bus will be used as the key fill.

### Selecting the key source

Use the buttons in the SOURCE section to select the key source from the three following types.

#### Key bus signal

Press the KEY BUS button.

The signal currently selected on the key bus will be used as the key source. If the KEY BUS button in the FILL section has been pressed, the signal currently selected as the key fill will be used also as the key source.

#### Key source signal assigned to key fill

Press AUTO/SPLIT. The signal on the key bus which has been stored as the key source corresponding to the key fill will automatically be used as the key source. Use the KEY SRC ASSIGN menu (see page 9-24) to assign a key source signal to a key fill.

---

### **Arbitrary signal different from key fill**

Holding down the AUTO/SPLIT button, select the desired video on the key bus. A signal different from the key fill can now be used as the key source even if the KEY BUS button in the FILL section has been pressed.

### **Key source inversion**

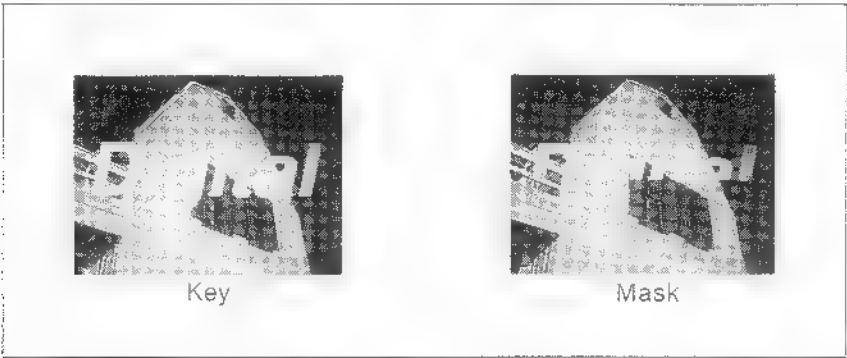
When using a luminance key, for example, inverting the polarity of the key source signal allows dark letters instead of bright letters to be used as the key source.

#### **Inverting the video of the key source**

Press the KEY INV button in the KEY MOD section.

## Key mask

When an undesirable hole has been cut in the background as a result of selecting a wrong key source, for example, the hole portion can be masked using the MASKS section of the common control block.



### Delegating the MASKS section to a Keyer

In the MASKS section of the common control block, the same set of buttons control the five keyers, that is, the key 1 and key 2 on the M/E-1 and M/E-2 blocks and the DSK key on the PGM/PST block. Before carrying out a key mask, it is necessary to delegate the MASKS section to a keyer to be controlled using either of the two methods below.

- Select the keyer to be controlled by pressing the appropriate button in the DELEGATION section of the MASKS section. The selected button will light.
- Press the MASK button in the KEY MOD section of the keying control section of the M/E-1, M/E-2 or PGM/PST block. The button for the current keyer in the DELEGATION section of the MASKS section will then light.

---

### Using a wipe pattern for masking

Masking can be performed with a wipe pattern using one of the wipe generators for the M/E-1, M/E-2 and PGM/PST blocks.

- 1** Delegate the MASKS section to the keyer to be controlled.
- 2** Press one of the M/E-1 WIPE, M/E-2 WIPE or P/P WIPE button in the SOURCE section to select the wipe generator to be used.
- 3** Select the wipe pattern in the wipe pattern selection section.
- 4** Adjust the control knobs as follows.
  - Control C (clip) adjusts the size of the wipe mask.
  - Control G (gain) adjusts the softness of the edge.

### Wipe pattern to be used

The selected wipe pattern can be modified using a wipe generator. For more details, refer to the section “Wipe Operations” on pages 3-45 to 3-73.

Note that the DIRECTION section cannot be used.

- For each of the M/E-1, M/E-2 and PGM/PST blocks, only one wipe pattern can be used in a transition. Therefore, the same wipe pattern must be used for the wipe, the pattern key and the wipe mask.

### Using ■ box mask

A specified area is masked with a box using the box mask for each keyer.

- 1** Delegate the MASKS section to the keyer to be controlled.
- 2** Press BOX in the SOURCE section.
- 3** Adjust the control knobs as follows.
  - Control L adjusts the left-hand side of the box.
  - Control R adjusts the right-hand side of the box.
  - Control T adjusts the top of the box.
  - Control B adjusts the bottom of the box.
- 4** Press BOX once more.
- 5** Use control G (gain) to adjust the softness of the edge of the mask.

### Masking with an external signal

One of the switcher's primary inputs can be assigned to the EXT button in the SOURCE section as the external mask signal using the EXT MASK SOURCE menu (see page 9-28). Masking with this assigned external signal is carried out as follows.

- 1** Delegate the MASKS section to the keyer to be controlled.
- 2** Press EXT in the SOURCE section.
- 3** Adjust the control knobs as follows.
  - Control C (clip) adjusts the size of the mask.
  - Control G (gain) adjusts the softness of the edge of the mask.

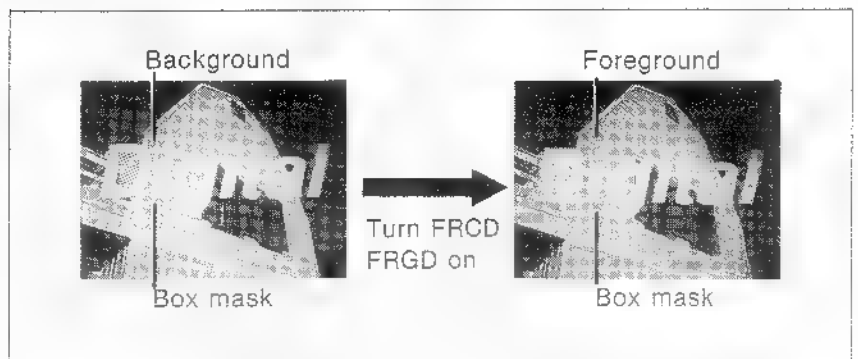
### Inverting the key mask

Polarity of the mask signal is inverted.

- 1** Delegate the MASKS section to the keyer to be controlled.
- 2** Press MASK INV in the MASKS section.

### Forcing ■ foreground video in the masked area

A background image shows through the masked area after executing a normal key mask. Following the procedure below, a foreground video can be output to the masked area. This is convenient when the desired key shape cannot be obtained by the key source.



- 1** Delegate the MASKS section to the keyer to be controlled.
- 2** Press FRCD FRGD in the MASKS section.

Selecting the key border

Use the buttons in the BORDER section to produce various effects on the edge of the key pattern.  
Select either edge width 4H or 8H mode for a drop border and a shadow using the SHADOW WIDTH menu (see page 9-30).

**Key fill and key source positioning with ■ key border applied**  
The position of the key source and key fill may be moved down by four lines, depending on the type of key border, as shown in the following table.

Type of key border		Key fill/key source positioning
Border		Moved down 4 lines
Drop border	4H mode	Moved down 4 lines
	8H mode	Not moved
Shadow	4H mode	Moved down 4 lines
	8H mode	Not moved
Outline		Moved down 4 lines
Edge normal	SOFT button off	Not moved
	SOFT button on	Moved down 4 lines

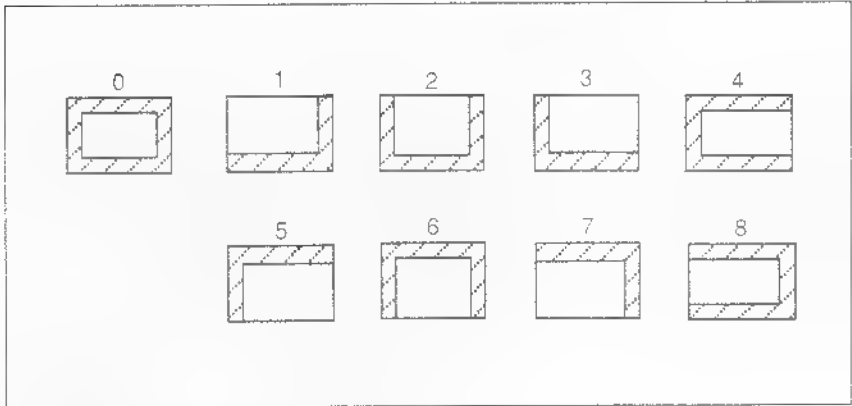


### Applying a border

A border of a specified thickness can be applied to the entire edge of the key.



The border can be applied in any of the nine positions shown in the following figure.

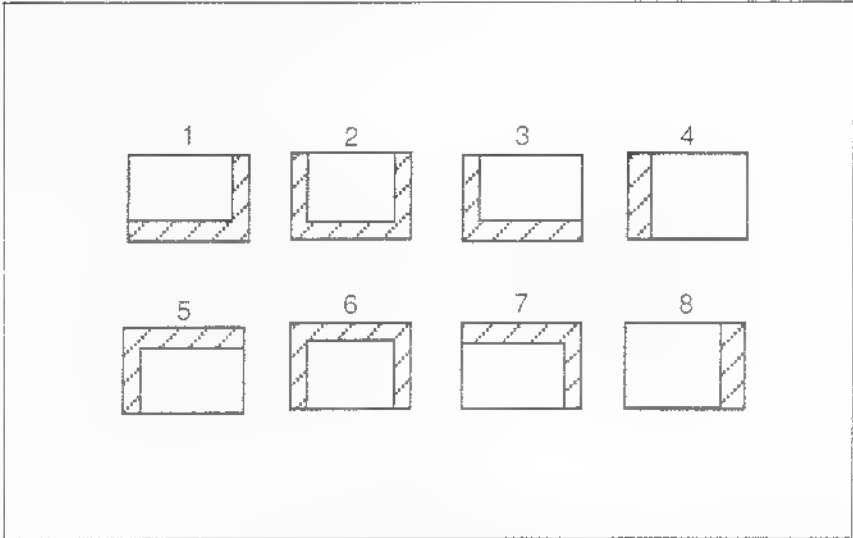


Border positions

- 1** Press the BORD button which will light in high tally. This applies a border around the key.
- 2** Adjust the control knobs as follows.
  - Control W specifies the width of the border in terms of horizontal scan lines. (0 to 4)
  - Control P (position) sets the border position. Select the appropriate numerical value from 0 to 8, corresponding to the positions in the above figure.
  - Control D adjusts the density (in other words transparency) of the border.

### Applying a drop border

A drop border can be applied in any of the eight directions shown in the following figure.



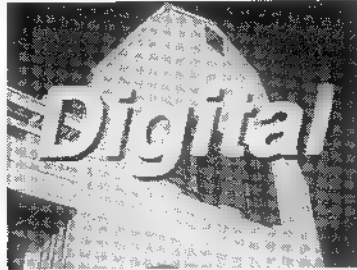
Drop border positions

- 1** Press the DROP BORD button which will light in high tally. This will apply a drop border in the lower right direction.
- 2** Adjust the control knobs as follows.
  - Control W adjusts the drop border width. The range depends on the edge width mode as follows.
    - Edge width 4H mode: 0 to 4
    - Edge width 8H mode: 0 to 8
  - Control P specifies the position of the drop border as follows.
    - Edge width 4H mode: 1 to 8
    - Edge width 8H mode: 1 to 3The numbers specifying the position are as shown in the figure above.
  - Control D adjusts the density (in other words transparency) of the drop border.

---

### Applying a shadow

A drop shadow can be applied to the key in the same eight directions as for the drop border. A shadow is placed further away from the key than the drop border.



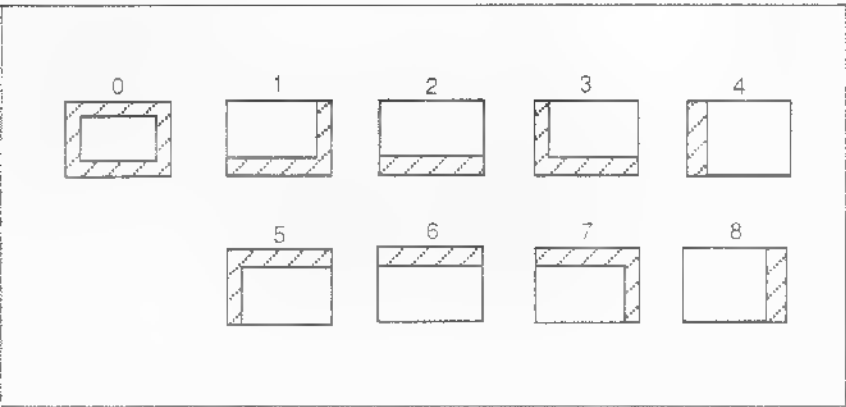
- 1** Press the SHDW button which will light in high tally. This applies a shadow below and to the right of the key.
- 2** Adjust controls W, P and D exactly the same way as for the drop border.

### Outline fill

This allows the outline only of the key source to be used for the key fill.



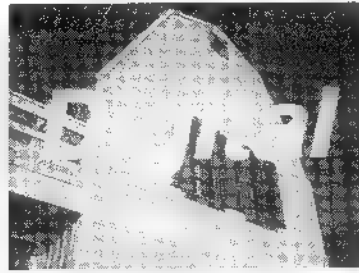
The outline can be applied in any of the nine positions shown in the following figure.



Outline positions

- 1** Press the OUTLINE button which will light in high tally. The outline only of the key source appears, being filled with the key fill signal.
- 2** Adjust the control knobs as follows.
  - Control W adjusts the width of the outline in scan lines. (1 to 4)
  - Control P (position) sets the outline position. Select the appropriate numerical value from 0 to 8, corresponding to the positions in the above figure.
  - Control D adjusts the density (in other words transparency) of the outline.

## Using the edge normal function



Press the EDGE NORM button to remove all of the border effects, and to return to a plain key.

- There is always this button or one of the buttons in the BORDER section (BORD, OUTLINE, DROP BORD, SHDW) lit.
- When this button is lit, pressing the SOFT button in the BORD MOD section gives a soft appearance to the edge. In this case, the positions of the key fill and key source are moved down by four lines.

### Applying a border or outline to ■ pattern key

You can also apply a border or outline when using pattern keying.

- 1** Press BORD to apply a border or OUTLINE to apply an outline.
- 2** Use control D (density) to adjust the density.
- 3** To adjust the width of the border or outline, press the BORD button in the EDGE section of the WIPE section, turning it on, and use control W (width).

To apply a drop border or shadow to a pattern key, follow the normal procedure. See pages 3-37 and 3-38.

#### Note

Carrying out step 3 above also changes the border width of any wipe or mask source using the same wipe generator as the pattern key.

You can also change the color of the pattern key border. For more details, see the section “Key border modification” on the next page.

---

## Key border modification

Using the buttons in the BORD MOD section, you can change the color of the border or give it a soft appearance.

### Changing the color of the key border

- 1** Press the COL button which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control L adjusts the luminance.
  - Control S adjusts the saturation.
  - Control H adjusts the hue.

### Note on coloring the key border

If the EDGE NORM button or the OUTLINE button in the BORDER section is pressed, this function cannot be used.

### Getting a soft border

- 1** Press the SOFT button which will light in high tally.
- 2** Adjust the softness with control S.

## Interchanging the two keys

Which of the two keys is currently on top can be checked from the OVER indicators above the KEY 1 and KEY 2 buttons in the NEXT TRANSITION section. Additionally, if the key to which the keying control section is currently delegated is on top, the KEY OVER button in the keying control section will be on.

### To reverse the relationship between the two keys

Press the KEY OVER button.

### Inserting and deleting keys

The ON indicators over the KEY 1 and KEY 2 buttons show whether the keys are currently inserted in the program output video. Use one of the following procedures to insert or delete a key.

#### Inserting or deleting by carrying out a transition

- 1** Press one or both of the KEY 1 and KEY 2 buttons in the NEXT TRANSITION section.  
This will insert or delete the respective keys.
- 2** Carry out a transition using the AUTO TRAN or CUT button, or the fader lever.

#### Inserting or deleting by using the KEY ON button

- 1** Press one of the KEY1 SEL or KEY2 SEL buttons, to select the key which is to be inserted or deleted.
- 2** Press the KEY ON button.  
The key is inserted or deleted instantaneously, as when pressing the CUT button to carry out a transition.

Either the key cut or key mix function can be delegated to the KEY ON button of the downstream keyer. Carry out this delegation from the OPERATION MODE menu (see page 9-10). If you delegate the key mix function, the value for the transition duration is that shown on the FRAMES display in the transition control section of the PGM/PST block.



---

## Wipe Operations

A wipe is an effect by which one video image is gradually replaced by another as if wiped off according to a selected wipe pattern. It is used in a transition of a background and a key, and in a mix transition of a color background.

### Overview of wipe operations

The DVS-8000/8000C switcher has five wipe generators built in for:

- The M/E-1 block
- The M/E-2 block
- The PGM/PST block
- Synthesizing color background 1
- Synthesizing color background 2

Since these five wipe generators are controlled by the WIPE section, it is first necessary to delegate the control to the appropriate wipe generator.

The basic wipe operation is described next, but depending on the combination of wipe generator and pattern used, there may be some restrictions on which buses can be used.

- 1** Delegate the WIPE section to the wipe generator to be used. (Wipe generator selection section)
- 2** Select the pattern to be used. (Wipe pattern selection section)
- 3** Apply the required modification to the selected pattern.
  - Pattern modification (MODIFIERS section)
  - Pattern modulation (MODULATION section)
  - Pattern rotation (ROTATION section)
  - Pattern positioning and motion selection (POSITIONER section)
  - Pattern edge modification (EDGE section)
  - Wipe direction selection (DIRECTION section)
  - Storing and recalling wipe patterns (Wipe pattern storing section)

- 4** Select the transition type. (Transition control section)
  - When carrying out a wipe other than a DME wipe, press the WIPE button.
  - To carry out a DME wipe, press the DME button.
- 5** Carry out the transition.

### Notes

For each of the M/E-1, M/E-2 and PGM/PST blocks, a pattern selected on the wipe pattern selection section is used in the following cases other than a wipe.

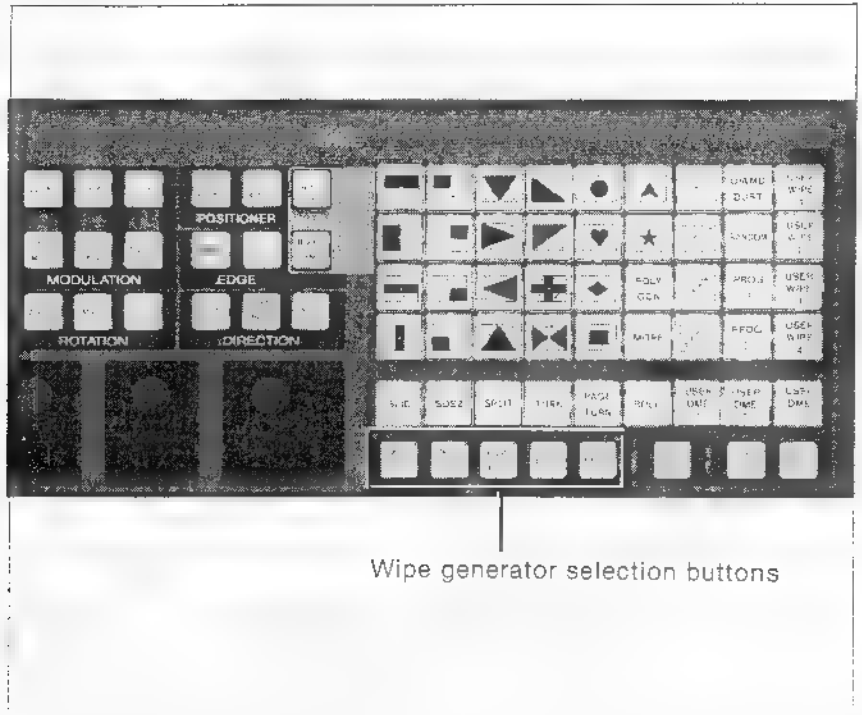
- When a pattern key is selected as a key type for key 1 or key 2.
- When a wipe pattern is selected as a mask source.

Since the M/E-1, M/E-2 and PGM/PST blocks each have only one wipe generator, in one transition the wipe, pattern key, or mask source must be the same.

The following sections describe the wipe operation in detail.

## WIPE section delegation

It is first necessary to specify which of the five wipe generators built into the switcher the WIPE section is controlling. To carry out this delegation of the WIPE section, use the wipe generator selection buttons.



- To carry out a wipe on the M/E-1, M/E-2 or PGM/PST blocks, press the corresponding button.
- To carry out a mix of two color backgrounds using a wipe, press the button for the corresponding color background (COL BKGD 1 or COL BKGD 2).

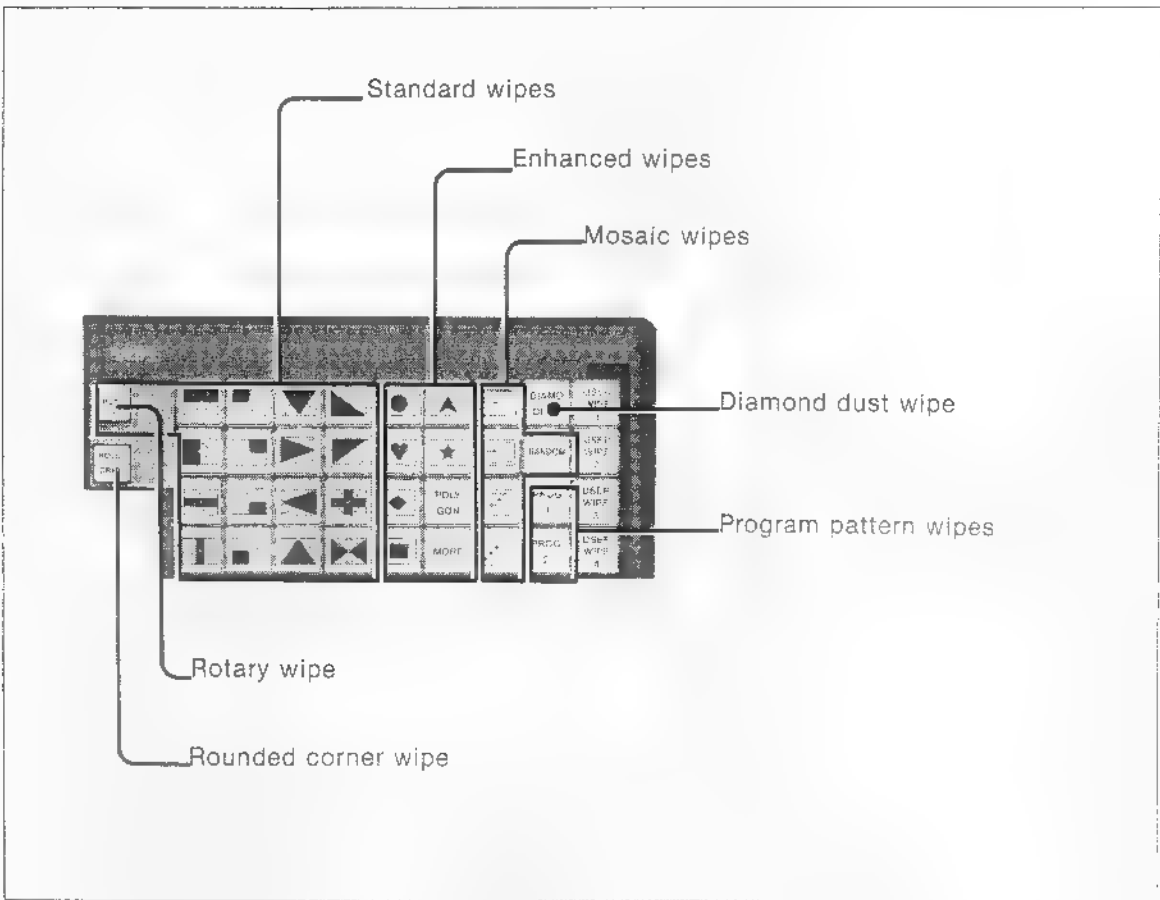
### **Automatic delegation of the WIPE section**

In the following cases, the WIPE section is automatically delegated to a particular wipe generator, and the corresponding wipe generator selection button automatically lights.

- When the WIPE button or DME button is pressed on the transition control section.
- When the PTN KEY is selected with the keying control section.
- When one of the M/E 1 WIPE, M/E 2 WIPE or P/P WIPE buttons is pressed in the MASKS section.
- When either of the MIX buttons is pressed in the COLOR BKGD section.

Wipe pattern selection

Select the wipe pattern with the wipe pattern selection buttons. There are seven types of wipe effects as shown in the photograph.



Standard wipes

The patterns on the buttons show the portions corresponding to the old image in white and the new image in black. Arrows are used to indicate the direction of the rotary wipe motion and a pinhole to show the center of the rotary wipe motion.

### Enhanced wipes

The patterns on the buttons show the portions corresponding to the old image in white and the new image in black.

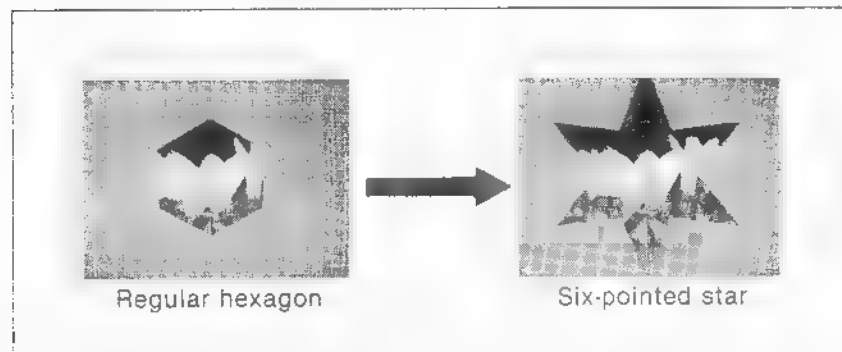
For wipes on the PGM/PST block and color background wipes, only the following three patterns can be used:   .

The functions of the POLYGON and MORE buttons are as follows.

- **Polygonal wipe**

A regular polygon can be used to determine the shape of the wipe pattern. The polygon can have anything from three to fifteen sides, and a star shape is also possible. This cannot be used with the PGM/PST block or for a color background wipe.

- 1** Press POLYGON.
- 2** Press the TRNSFORM button in the MODIFIERS section.
- 3** Adjust the control knobs as follows.
  - Control P (polygon) specifies the number of sides of the polygon. (3 to 15)
  - Control S (star) transforms the polygon into a progressively more pointed star.



### Note

When using the POLYGON button for the subsidiary pattern in a pattern mix or pattern non-additive mix (see pages 3-59 to 61), the TRNSFORM button cannot be used to change the shape of the polygon. In general, use the POLYGON button only for the main pattern.

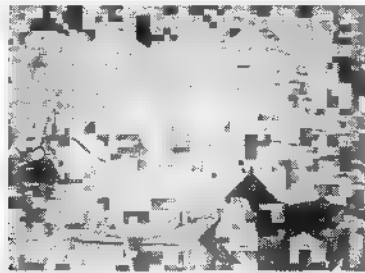
- 
- Extended enhanced wipes

The MORE button offers a choice of a further 16 patterns. With the PTN MIX or PTN NAM button lit in the MODIFIERS section, select the main pattern and subsidiary pattern separately. This cannot be used with the PGM/PST block or for a color background wipe.

- 1** Press the MORE button.
- 2** Press the TRANSFORM button in the MODIFIERS section.
- 3** Adjust the control knobs as follows.
  - Control M (main) specifies the main pattern. (1 to 16)
  - Control S (sub) specifies the subsidiary pattern. (1 to 16)

**Mosaic wipe**

This divides the screen into small squares, to form a mosaic, and these change sequentially in the direction shown by the arrow(s). If the RANDOM button is pressed, the wipe pattern will be the small squares scattered all over the screen.  
This cannot be used for a color background wipe.



**Rotary wipe**

This is a wipe in which the selected pattern rotates like an opening door. The wipe motion is centered on the pinhole shown on the button.  
This cannot be used for a color background wipe.

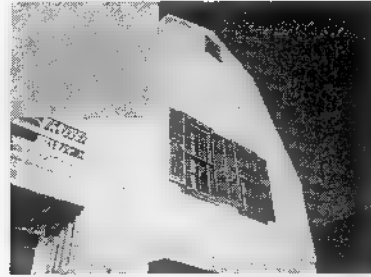


- 1** Press the ROT button.
- 2** Select a pattern with a pinhole shown on the button.



### **Rounded corner wipe**

The corners of the selected pattern are rounded. This cannot be used with the PGM/PST block or for a color background wipe.



**1** Press the ROUD CRNR button.

**2** Press the desired pattern from the following five buttons.



### Diamond dust wipe

This gives the impression of a scatter of fine particles. The wipe generators for the M/E-1, M/E-2 and PGM/PST blocks share this wipe pattern. It cannot be used for a color background wipe.



- 1** Press the DIAMD DUST button.
- 2** To change the size of the particles or the speed of twinkling, press the TRNSFORM button in the MODIFIERS section.
- 3** Adjust the control knobs as follows.
  - Control H adjusts the horizontal size.
  - Control V adjusts the vertical size.
  - Control F adjusts the flashing rate.

### Note

When using the DIAMD DUST button for the subsidiary pattern in a pattern mix or pattern non-additive mix (see pages 3-59 to 3-61), the TRNSFORM button cannot be used to change the shape or twinkling speed of the particles. In general, use the DIAMD DUST button only for the main pattern.

### Program pattern wipe

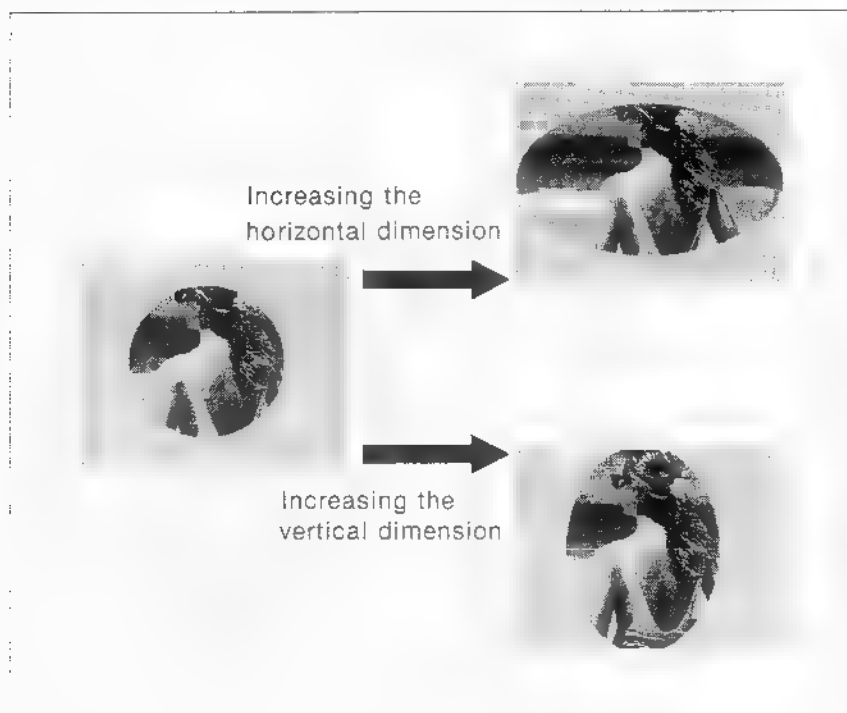
A pattern not shown on any of the wipe pattern selection buttons can be recalled from a wipe generator and assigned to the PROG 1 or PROG 2 button. Pattern assignment is carried out using the WIPE menu (see page 9-31).

Whether the assigned pattern can be used with the PGM/PST block or for a color background wipe depends on the type of the wipe effects.








## Pattern modification

Once a wipe pattern is chosen, it can be modified in various ways, using the buttons from the MODIFIERS section.

### Changing the aspect ratio



Note that the aspect ratio cannot be changed when any of the following wipe effects are selected.

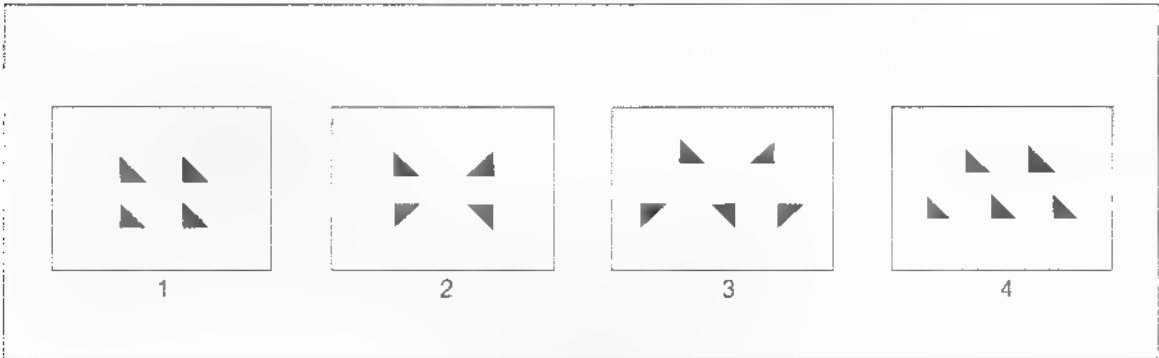
-       
- A rotary wipe
- A mosaic wipe
- A diamond dust wipe

- 1** Press the ASP button which will light in high tally.
- 2** Turn control A to adjust the aspect ratio.  
Rotating the knob clockwise stretches the pattern horizontally, and rotating it counterclockwise stretches it vertically.

## Switcher Operation



### Multiplying ■ pattern

The selected pattern can be multiplied up to 15 times either horizontally or vertically, except when a mosaic wipe or a diamond dust wipe is selected. The pattern multiplication can be configured in any of the following four ways.



- 1** Press the MULTI button which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control H specifies the number of multiplications horizontally. (1 to 15)
  - Control V specifies the number of multiplications vertically. (1 to 15)
  - Control S (shift) specifies which of the configurations shown in the figure above is to be used. (1 to 4)

### Producing a Venetian blind pattern

The selected pattern can be modified to appear like a pair of Venetian blinds. This cannot be used for a color background wipe, or when a mosaic or diamond dust wipe or either of the wipe patterns  and  is selected.



- 1** Press the PAIR button which will light in high tally.
- 2** Turn control P (pair) to adjust the width of the blind slat.

### Producing a two-directional wipe (split)

The selected wipe pattern is split into a normal portion and a reverse portion, and a wipe is carried out simultaneously for each of the two portions in opposite directions.

This cannot be used with the PGM/PST block, or for a color background wipe, or when a rotary, mosaic or diamond dust wipe is selected.



Press the SPLIT button to select this wipe.

**Producing a pattern like ■ spring welling out**

Moving the fader lever thins or widens a selected pattern. This can be used only if an enhanced wipe or rounded corner wipe is selected. It cannot be used with the PGM/PST block or for a color background wipe, and also cannot be used with the spiral wipe.



- 1** Press the SPRIG button which will light in high tally.
- 2** Turn control G (gain) to adjust the gain, or thickness, of the pattern.

### **Spiral wipe**

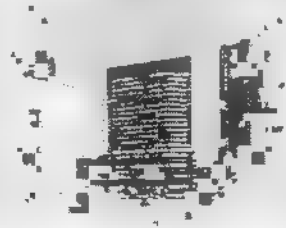
This allows a selected pattern to be wiped in a spiral fashion with the movement of the fader lever. This can be used only if an enhanced wipe or rounded corner wipe is selected. It cannot be used with the PGM/PST block or with a color background wipe.



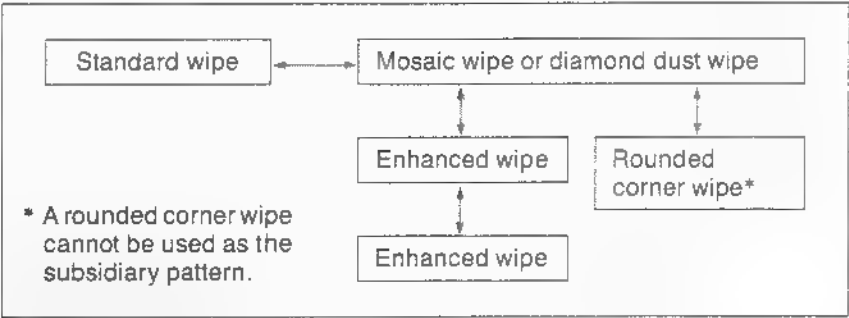
- 1** Press SPIRL which will light in high tally.
- 2** Turn control M (magnitude) to select the size and direction of the spiral for the current position of the fader lever.

### **Mixing two wipe patterns**

Two wipe patterns can be combined in a single mixed wipe pattern. The control knob adjusts the proportion of the subsidiary pattern to the main pattern. This cannot be used for a color background wipe.



Patterns can be combined in any of the ways shown in the figure.



- 1** Select the main pattern from the wipe pattern selection section.
- 2** Press PTN MIX.
- 3** Press the SUB PTN button below the wipe pattern selection section.
- 4** Select the subsidiary pattern from the wipe pattern selection section.  
The button for the selected pattern will light in green.
- 5** Turn control G (gain) to adjust the proportion of the subsidiary pattern.

To change the main pattern, press the SUB PTN button which will go off, and select a different pattern.

**Note**

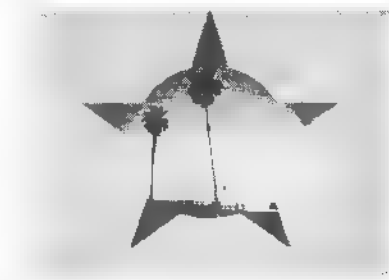
In a pattern mix combination, the main pattern always has priority. Selecting the main pattern disables the buttons which could not be used for the subsidiary pattern in combination with this pattern. If an incompatible subsidiary pattern is already selected, it automatically changes to a different pattern which is compatible.



---

### Mixing two wipe patterns for a non-additive mix

Two wipe patterns can be combined in a non-additive mix wipe pattern. The control knob adjusts the proportion of the subsidiary pattern to the main pattern. This cannot be used with the PGM/PST block or for a color background wipe. In this type of mix, only enhanced wipe patterns can be used.



- 1** Select the main pattern from the wipe pattern selection section.
- 2** Press PTN NAM.
- 3** Press the SUB PTN button below the wipe pattern selection section.
- 4** Select the subsidiary pattern from the wipe pattern selection section.  
The button for the selected pattern will light in green.
- 5** Turn control G (gain) to adjust the proportion of the subsidiary pattern.

To change the main pattern, press the SUB PTN button which will go off, and select a different pattern.

## Pattern modulation

By modulating the edges of the pattern with a waveform, the whole pattern can be given a wavy appearance. This can be applied horizontally, vertically and radially, and also in combinations of these. Use the buttons in the MODULATION section to carry this out.

### Note

When the degree of modulation is high, it is restricted as the transition proceeds, so that the change is completed for the whole image when the transition completes.

### Applying modulation in the horizontal direction

This cannot be used if a mosaic wipe or diamond dust wipe is selected.

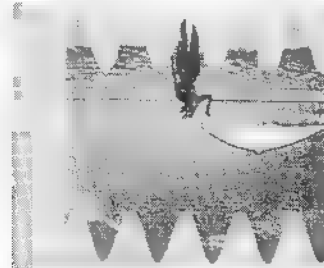


- 1** Press the H MOD button.
- 2** Adjust the controls as follows.
  - Control A adjusts the amplitude.
  - Control F adjusts the frequency (or wavelength) of the modulation.
  - Control S adjusts the speed of wavy motion.
- 3** Pressing the LOCK button halts the wavy motion as required.

---

### **Applying modulation in the vertical direction**

Press the V MOD pattern. Adjust the modulation in the same way as for horizontal modulation. This cannot be used if a mosaic wipe or diamond dust wipe is selected.



### **Applying modulation in the radial direction**

Press the FRINGE button. Adjust the modulation in the same way as for horizontal modulation.

This can be used only if an enhanced wipe or rounded corner wipe is selected. It cannot be used with the PGM/PST block or for a color background wipe.



### Pattern rotation

This allows the selected pattern to be rotated, and it is controlled by the buttons in the ROTATION section. It cannot be used if a rotary wipe, mosaic wipe or diamond dust wipe is selected.

#### **Inclining the pattern at a fixed angle**

The selected pattern can be inclined clockwise or counterclockwise at an angle of up to 360°.



- 1** Press the ANGL button which will light in high tally.
- 2** Turn control A (angle) to select the direction and angle of inclination.

---

### **Rotating the pattern with the transition**

The selected pattern can be rotated clockwise or counterclockwise in time with transition. The pattern can rotate up to two full turns in either direction over the duration of the transition.

- 1** Press the MAG button which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control A selects the direction and angle of inclination for the pattern at the start of the transition.
  - Control M selects the angle through which the pattern rotates over the duration of the transition.

### **Rotating the pattern at ■ fixed speed**




The selected pattern can be rotated at a fixed speed during the transition.

- 1** Press the SPD button which will light in high tally.
- 2** Turn the control S to select the speed and direction of rotation.

The pattern rotates in the direction the knob is turned.

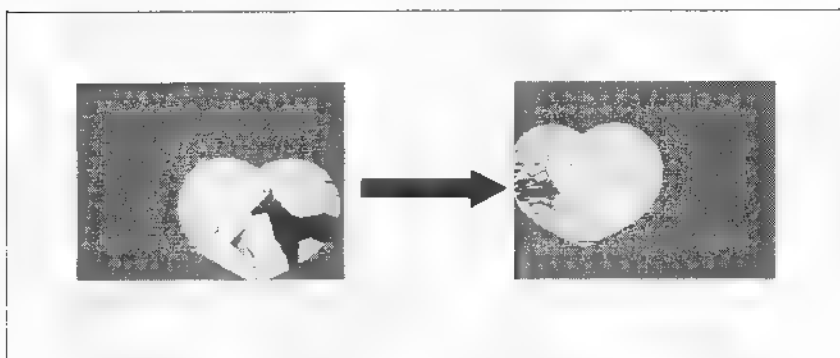
### Adjusting the pattern position and direction of motion

Use the buttons in the POSITIONER section to adjust the positioning and motion of the pattern. This cannot be used with any of the following patterns.

- Standard wipes except for:   
- Mosaic wipes
- Rotary wipes for which the center of rotation is at the edge of the screen
- Diamond dust wipe

#### Shifting the position of the pattern

Use the joystick to shift the wipe pattern to any desired position.



- 1** Press POS NORM or POS AUTO.  
The WIPE button will automatically light on the joystick control section.
- 2** Use the joystick to shift the position of the pattern.

---

### **Returning the pattern position to the center of the screen**

If the pattern has been driven out of the screen during pattern shifting, it can be returned to the center of the screen.

- 1** Press either of the POS NORM or POS AUTO buttons.
- 2** Press the CTR button with the WIPE button lit on the joystick control section.

### **Selecting the motion of the center through the transition**

Select whether or not the center of the pattern is to move with the transition.

**POS NORM button:** The pattern center does not move during the transition.

**POS AUTO button:** As the transition progresses, the center of the pattern moves toward the center of the screen.

### **Note**

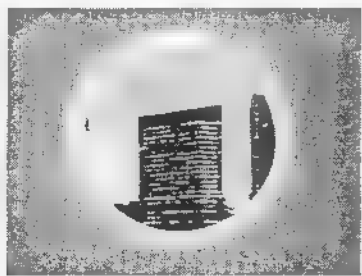
When executing a transition with the POS NORM button pressed, old video may not completely change to new video depending on the combination of wipe pattern and modifier.

## Modifying the pattern edge

The following effects can be applied to the edge of the selected pattern, using the buttons in the EDGE section.

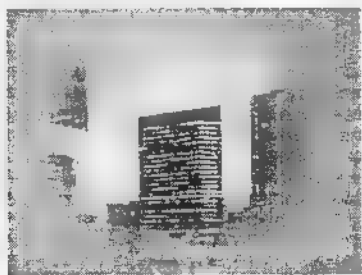
### Applying a border

You can specify the width of the border to be applied.  
This cannot be used with a wipe on the PGM/PST block.



- 1** Press the BORD button which will light in high tally.
- 2** Adjust the control knobs as follows.
  - Control L adjusts the luminance.
  - Control S adjusts the saturation.
  - Control H adjusts the hue.
  - Control W adjusts the width of the border.

### Giving the edge a soft appearance



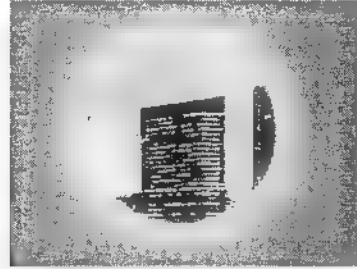
- 1** With the BORD button being off, press the SOFT button which will light in high tally.
- 2** Adjust the control S to vary the softness of the edge.



---

### Applying a soft border

Except on the PGM/PST block, a soft border can also be applied.



- 1** Press BORD and SOFT buttons.  
The control knobs are delegated to whichever of the buttons is pressed last.
- 2** Adjust the effect with the control knobs.  
When the control knobs are delegated to the BORD button, they make the same adjustments as in the case of a normal border.  
When the control knobs are delegated to the SOFT button, the controls are as follows.
  - Control I adjusts the softness of the inner edge of the border.
  - Control O adjusts the softness of the outer edge of the border.
  - Control W adjusts the width of the border.
- 3** Press the other of the two buttons, which will light in high tally, and then adjust the control knobs.

### Selecting the wipe direction

The direction of a wipe can be reversed, or you can have it go in opposite directions on alternate transitions. Use the buttons in the **DIRECTION** section. Note that the direction cannot be reversed for a color background wipe or a mask source wipe.

#### **To wipe in the normal direction**

Press the **NORM** button. The direction of movement is from the black portion to the white portion as shown on the button.

#### **To wipe in the reverse direction**

Press the **REV** button. The wipe will then go from the white portion to the black portion.

#### **For alternating wipe directions**

Press the **NORM REV** button. Alternate transitions will be in opposite directions.

---

## Storing and retrieving wipe patterns

A wipe pattern together with modifications can be assigned to one of the USER WIPE 1 to 4 buttons, and then recalled when necessary. These assigned patterns can be recalled for any of the M/E-1, M/E-2, PGM/PST, color background 1 or color background 2 block.

The following information is stored.

- Wipe pattern (when using a pattern mix, or non-additive mix, two patterns are stored.)
- Information on the MODIFIERS section (including control knob settings for each button).
- Information on the MODULATION section (including control knob settings for each button).
- Information on the ROTATION section (including control knob settings for each button).
- Information on the EDGE section (including control knob settings for each button).

Use the following procedure to store and retrieve the pattern information. Note that color background wipes cannot be stored.

### Storing a wipe pattern

- 1** Set up the wipe and modifying values.
- 2** Press the LERN USER button which will light.
- 3** Press one of the USER WIPE 1 to 4 buttons.  
The wipe pattern will be stored and the button will go off.

### Recalling wipe patterns

To recall one of the user wipe patterns, press the corresponding button (USER WIPE 1 to 4). The USER WIPE button will not light, but the buttons corresponding to the settings in the user wipe will come on.

To return to the state immediately before the last user wipe recall, press LAST X.

### Restricting the wipe range

The range through which the wipe is carried out can be limited so that the remaining portion is left as the old video.

#### Setting the wipe range limit

- 1** In the transition control section of the relevant block (M/E-1, M/E-2, or PGM/PST), press PTN LIMIT, which will light in high tally.
- 2** Use control P (pattern limit) to specify the range.
  - If the range is set to the minimum, moving the fader lever does not change the video.
  - If the range is set to the maximum, the video can be changed as if the PTN LIMIT button has not been pressed.

However, exchange of crosspoint selections between the BKGD A and B buses does not occur.

Note that the PTN LIMIT button affects not only wipes, but also restricts the range of all other transitions.

---

## **Cancelling wipe modification effects**

All of the transformation, modification and modulation currently selected for the wipe pattern can be cancelled.

### **Cancelling the selected modification**

Hold down the lit button in the wipe pattern selection section for more than one second and all of the lit buttons in the MODIFIERS, MODULATION, ROTATION, POSITIONER and EDGE sections will go off. However, lit buttons in the DIRECTION section will remain lit. This operation restores the original wipe pattern selected.

DME Wipe Operations

Connecting a DME-5000 digital multi effects to the switcher system will allow DME wipes, which combine a wipe pattern with special effects. DME wipes cannot be used on the PGM/PST block.

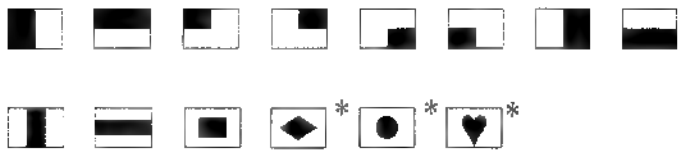
Types of DME wipe

The following are the DME wipe types, selected with the buttons in the DME wipe selection section.

**SLID (slide):** The new video appears to slide over the top of the old video. The following patterns can be used:



**SQEZ (squeeze):** The old video shrinks as the new video expands into the same space. The following patterns can be used. (The patterns marked \* require the BKDM-5040 lighting option.)



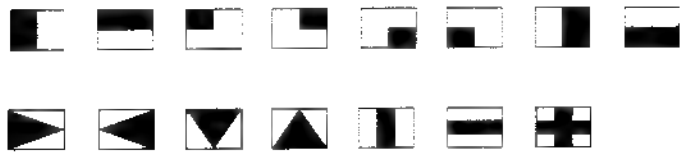
**SPLIT:** The old video splits, to reveal the new video. The following patterns can be used:



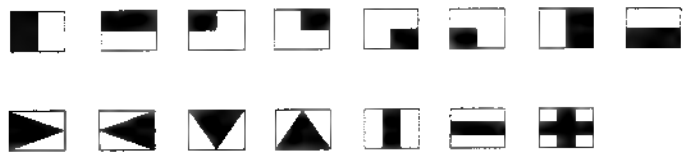
**TURN:** The old video turns like a door, to reveal the new video. The following patterns can be used:



**PAGE TURN:** The old video peels away like a page turning, to reveal the new video. The following patterns can be used:



**ROLL:** The old video peels away like a carpet rolling up, to reveal the new video. The following patterns can be used:



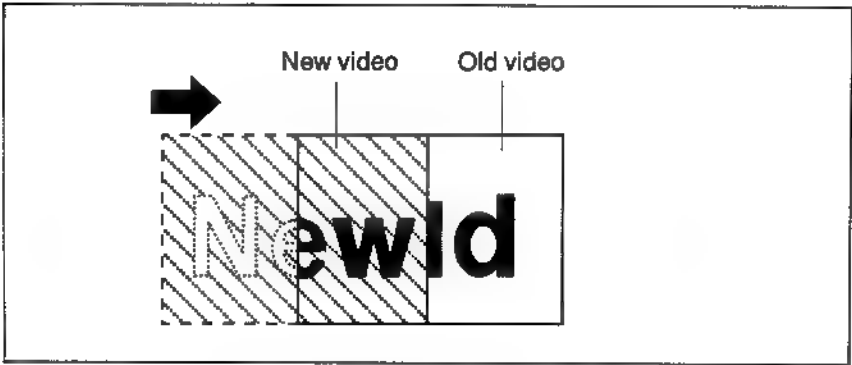
**USER DME 1 to 3:** In addition to the standard DME wipes, these buttons can be used to register user-defined effects.

# Switcher Operation

## Single mode and dual mode

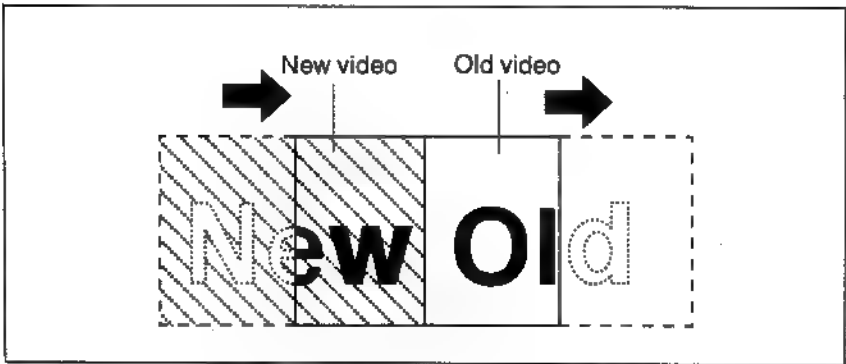
There are two modes for carrying out a DME wipe. Basically, in single mode the DME effect is applied to one video only, but in dual mode it is applied to both old and new video. Dual mode requires two DME-5000 units.

**Single mode:** In a background transition, the old video remains stationary, and the new video moves over it.  
In a key transition, the DME wipe can be applied to either key 1 or key 2.



A slide in single mode

**Dual mode:** In a background transition, both the new video and the old video move as the transition progresses.  
In a key transition, the DME wipe can be applied to both keys 1 and 2.



A slide in dual mode



## DME wipe modification

The following buttons can be used to modify a DME wipe, for example by specifying the direction or adding a border.

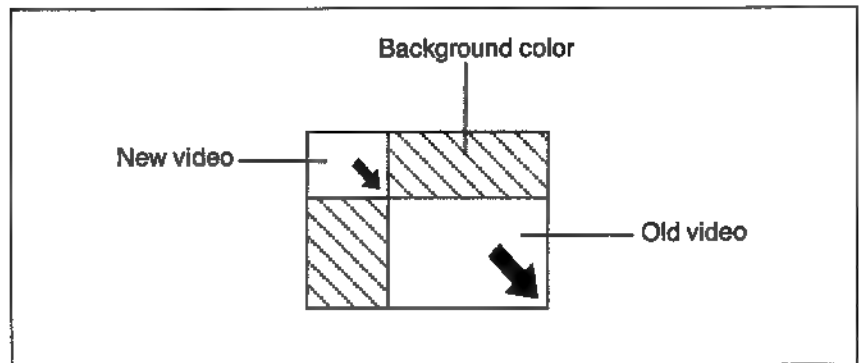
- DIRECTION section buttons—these can all be used.
- EDGE section buttons—these can only be used for a background transition.
- POSITIONER section buttons—these can be used with a squeeze wipe when one of the following wipe patterns is selected:



### Note

In a DME wipe, the POS NORM button in the POSITIONER section has the same effect as the POS AUTO button: the wipe pattern moves as the transition progresses.

Depending on the DME wipe selected, in dual mode there may be holes, which are filled with the DME-5000 background color. An example is shown below.



Dual mode squeeze

In this case, set the background color as required. For more details, see the section “Coloring the background” on page 5-17.

### DME wipe transitions

A DME wipe can only be used for either a background transition or a key transition. Before carrying out the transition, confirm the following:

- The previous transition has completed.
- The PRN LIMIT button in the transition control section is off.

#### Carrying out a background transition with a DME wipe

Use the following procedure on either the M/E-1 or M/E-2 block.

- 1** In the NEXT TRANSITION section of the transition control section, press the BKGD button.
- 2** In the TRANSITION TYPE section, press the DME button. If only one DME-5000 unit is connected, then if one block has a DME wipe already selected, until this wipe is deselected you cannot carry out a DME wipe on the other block. If the DME button is lit on another block, select a different transition type on that block, so that the DME button goes off.
- 3**
  - For single mode, check that the DUAL button is not lit.
  - To carry out ■ dual mode transition, press the DUAL button above the DME button, turning it on.
- 4** Press one of the buttons in the DME wipe selection section, to select the type of DME wipe.
- 5** In the wipe pattern selection section select the wipe pattern to be used. See pages 3-74 and 3-75 for a list of the patterns which can be used.
- 6** In the DIRECTION section, select the wipe direction.

---

**7** Select the new video.

**8** Using the fader lever or the AUTO TRAN button, carry out the transition.

#### **Notes**

The order of steps 1 to 7 above can be changed, but note the following points.

- If you carry out step 2 before step 1, one of the BKGD, KEY 1 or KEY 2 buttons will automatically be selected, depending on which was lit when the DME button was pressed. If more than one of these buttons is lit, the selection is made according to the following priority sequence:

**BKGD > KEY 1 > KEY 2**

- When you select the type of DME wipe in step 4, if a wipe pattern which cannot be used with that type is already selected, it automatically changes to a pattern which can be used.

These notes apply equally to a key transition with a DME wipe.

### Carrying out a key transition with a DME wipe

Use the following procedure on either the M/E-1 or M/E-2 block.

- 1** In the NEXT TRANSITION section of the transition control section, make the following selection:
  - For single mode: Press either KEY 1 or KEY 2.
  - For dual mode: Press both KEY 1 and KEY 2.
- 2** In the TRANSITION TYPE section, press the DME button. If only one DME-5000 unit is connected, then if one block has a DME wipe already selected, until this wipe is deselected you cannot carry out a DME wipe on the other block. If the DME button is lit on another block, select a different transition type on that block, so that the DME button goes off.
- 3**
  - For single mode, check that the DUAL button is not lit.
  - To carry out a dual mode transition, press the DUAL button above the DME button, turning it on.
- 4** Press one of the buttons in the DME wipe selection section, to select the type of DME wipe.
- 5** In the wipe pattern selection section select the wipe pattern to be used. See pages 3-74 and 3-75 for a list of the patterns which can be used.
- 6** In the DIRECTION section, select the wipe direction.
- 7** Select the key fill and key source. When carrying out a key transition in dual mode, select the key fill and key source for key 1 and key 2 respectively.  
If deleting the currently output key, this operation is not necessary.
- 8** Using the fader lever or the AUTO TRAN button, carry out the transition.

See the notes on the sequence of these steps in the previous section "Carrying out a background transition with a DME wipe" (page 79).

---

## Color Background Operation

The color background 1 or 2 can be output from each of the BKGD A, BKGD B and KEY buses on each of the two M/E blocks and PGM/PST block.

The switcher has two color background generators built in, which each generates color background 1 and 2. Each of the two generators has two mattes which can be synthesized to make a color for a color background.

Color background operation is controlled by the COLOR BKGD section buttons in the common control block. Operation below is common for the COLOR BKGD 1 and 2.

### Adjusting the matte 1

Adjust the matte 1 color if a single color is to be output.




- 1** Press the MAT 1 button which will change to high tally. This button is always on in low tally and when pressed, allows the control knobs to adjust the color.
- 2** Adjust control knobs as follows.
  - Control L adjusts the luminance.
  - Control S adjusts the saturation.
  - Control H adjusts the hue.

### Synthesizing two colors to make a color background

The matte 1 and matte 2 can be synthesized to make a new color.

- 1** Press the MIX button which will light in high tally.  
The MAT 2 button, which goes on and off whenever the MIX button is pressed, will also light.
- 2** Adjust control knobs as follows.
  - Control S adjusts the size of the area to be mixed and the direction in which mixture is carried out.
  - Control M adjusts the proportion of the matte 2 color.
- 3** If necessary, press the MAT 2 button and adjust the matte 2 color in the same way as for the matte 1 color.

### Synthesizing with a wipe pattern

Each of the two independent wipe generators for the color backgrounds 1 and 2 allows a wipe pattern to be used for synthesizing the matte 1 and matte 2. Standard wipes and enhanced wipes with    can be used for this purpose. The selected pattern can be modified using the following buttons.

- ASP and MULTI buttons in the MODIFIERS section
- H MOD and V MOD buttons in the MODULATION section
- ANGL and SPD buttons in the ROTATION section
- The BORD button in the EDGE section
- POSITIONER section buttons
- NORM and REV buttons in the DIRECTION section

With the MIX button lit, pressing the BORD button to change its state to high tally allows the control knobs to adjust the border.

- Control S adjust the size.
- Control I adjusts the softness of the inner edge.
- Control O adjusts the softness of the outer edge.
- Control W adjusts the width of the border.

---

## External Equipment Operation

With an external equipment such as an editor connected to the switcher, data inputs and outputs can be controlled from the control panel. This operation is controlled from the ENABLES section of the common control block.

The button in the ENABLES section without any indication cannot currently be used.

### **Enabling control from an editor**

Pressing the EDITOR button in the ENABLES section, which will light, enables control of the switcher from an external equipment connected to the switcher such as a BVE-9000 editing control system. Pressing the EDITOR button again, which will go off, disables control of the switcher from the connected equipment.

### **Enabling data exchange through GPI connector**

Pressing the GPI button in the ENABLES section, which will light, enables data to be exchanged between the switcher and an external equipment connected to the GPI connector on the rear panel of the switcher. Pressing this button again disables data exchange between the switcher and the external equipment. Setup for GPI inputs and outputs is controlled using the GPI IN menu (see page 9-37).

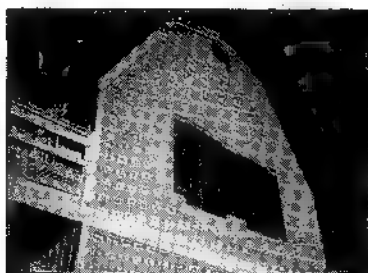
### **Controlling the AUX buses from an external unit**

When the PERIPH button in the ENABLE section is lit, it is possible to control the AUX 1 to 4 buses in the switcher from an external unit connected to the DME connector or AUX BUS connector on the rear panel of the switcher. Pressing the PERIPH button toggles it on and off.

---

### Safe Title Function

A safe title area can be superimposed on the monitor screen to ensure that titles are within the effective viewing area of a household television set. This operation is controlled by the **SAFE TITLE** button in the common control block.



Pressing the **SAFE TITLE** button superimposes a white frame mark and a cross target mark on the preview monitor screen. The cross target mark indicate the center of the screen.



## Chapter 4

# Menu Operations

---

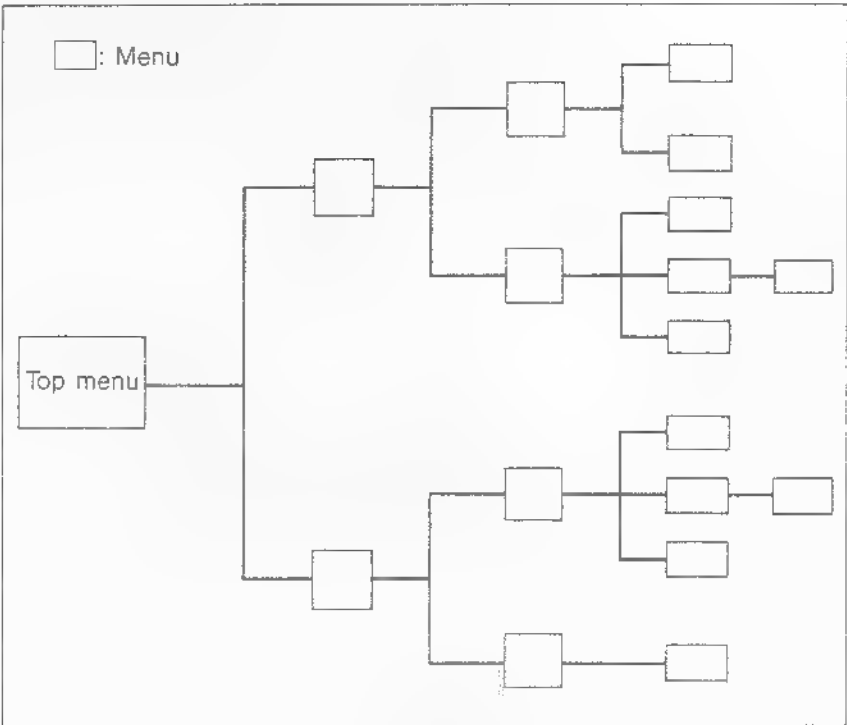
Introduction of the Menu system	4.1
The TOP MENU Buttons	4.2
Make Buttons	4.3
SWITCH Buttons	4.4

# Menu Operations

This chapter describes the overall organization of the menu system, and explains the procedures required to use it.

## Structure of the Menu System

The menus are arranged as a forest of trees, each of which has a separate top menu, accessed by one of the buttons in the TOP MENU section.



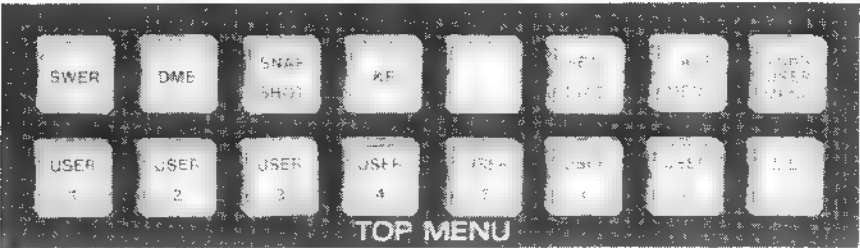
Menu Tree

To help you navigate through the menu system, the path to a particular menu from the top-level menu button is shown like this:

DME → F1 (Bkgd & Edge) → (Bkgd)

The TOP MENU Buttons

The TOP MENU section has two rows of buttons. The upper row are the system defined buttons which get you to the top of one of the menu trees, and the lower row are user definable.



TOP MENU buttons

Getting to the top menu

Each of the TOP MENU buttons will always get you to the same place, regardless of the current menu position when it is pressed.

The system defined top menus are as follows:

- SWER: SWITCHER menu
- DME: DME menu
- SNAPSHOT: SNAPSHOT menu
- KF: EFFECT menu
- SET/DIAG: SETUP & DIAG (setup and diagnosis) menu.

---

### **Registering user defined top menus**

Each button in the lower row, USER 1 to USER 8, can be assigned to any menu which you use frequently, for quick access. Use the following procedure.

- 1** Get to the menu you wish to assign to a button.
- 2** Press LERN (learn) USER MENU, which will start flashing.
- 3** Press one of the buttons USER 1 to USER 8.  
The current menu will be assigned to the user menu button, and the LERN USER MENU button will go off.  
The assigned menu can be recalled by pressing the button to which the menu is assigned.

### **Getting to the next menu from the current menu**

The function keys F1 to F8 get you to the menu shown in each of the eight boxes along the bottom of the menu display.

### **Going one level up the menu tree**

The EXIT button exits the current menu, and goes one level back up the menu tree.

### **Restoring the previous menu**

The LAST MENU button returns to whatever menu you were in previous to the current one. If you happen to be working in two menus at a particular time, you can use this button to jump back and forth between them.

### Making Settings

#### Selecting items

Along the bottom of the menu screen are eight boxes of soft key display, which show the functions of the corresponding function keys F1 to F8 in the current menu.

Sometimes a function key switches an option on and off, or switches to a different item. These changes are reflected by the indications in the boxes.

Note that soft key displayed in boxes having double lines at their top and bottom will lead you to submenus.

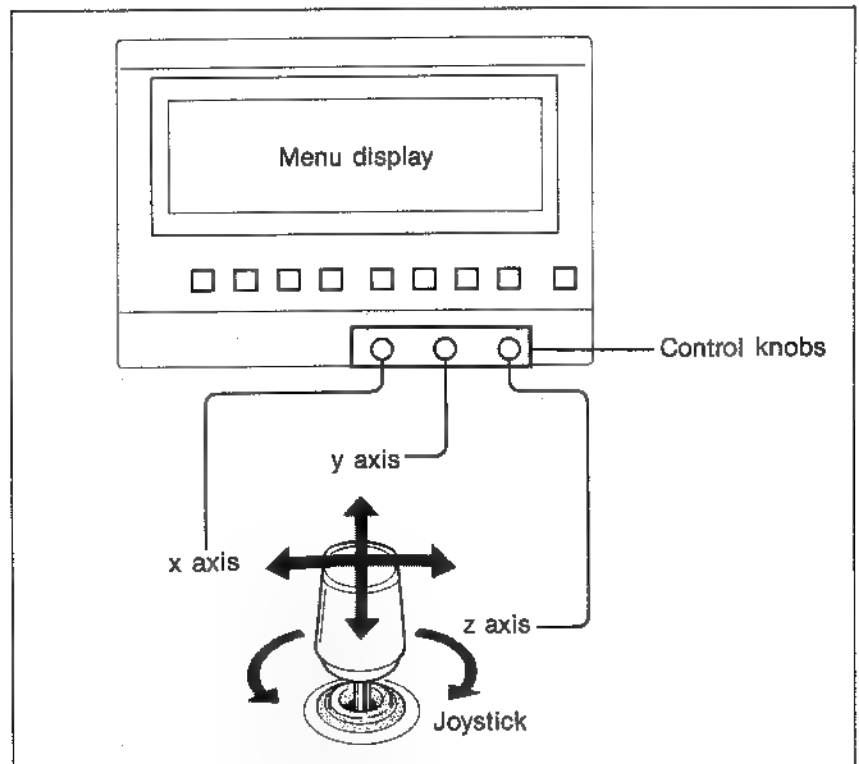
#### Using control knobs for adjustments

- When the item in the menu is indicated by the cursor, the three graphical displays represent the three setting values for the indicated item, which can be adjusted by the corresponding three control knobs. Turning one of the knobs changes the graphical display of the corresponding value.
- When more than one item can be adjusted, use F8 to move the cursor to the item to which the control knobs are to be delegated.

### Using the joystick for adjustments

You can use the joystick in place of the control knobs for any adjustment.

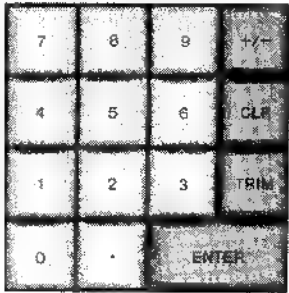
- 1 Press the MENU button in the joystick control section to delegate the section to the menu.
- 2 Joystick movement corresponds to the control knobs as follows.
  - X axis: Left control knob
  - Y axis: Center control knob
  - Z axis: Right control knob



Joystick correspondence with control knobs

**Inputting numeric values**

Whenever a pop-up window for entering a numeric value appears on the menu display, use the numeric keypad to input it.



Numeric keypad

- 1** Key in the numeric value.  
To input a time code, use the decimal point as the separator.  
Enter '4 min 32 sec 10 frames' as 4.32.10, for example.  
If you mis-key a number, press CLR and start again.
- 2** To reverse the sign press the +/- button.
- 3** To confirm the value, press ENTER.

If the value entered is inappropriate, an error message will be displayed. Press EXIT to clear the message.

---

### **Inputting a relative value**

Instead of inputting the new value, for some settings you can input an amount by which the current value is to be adjusted.

- 1** Press  $+/-$  to determine whether you increase or decrease the current setting.
- 2** Key in the adjustment value.
- 3** Press TRIM to add the input value to the current value.



---

### About the SWITCHER Menu

When the DVS-8000/8000C switcher is equipped with an optional BKDS-8030/8031 clean chroma key board and BKDS-8040/8041 frame memory board, you can use the functions of these boards from the appropriate submenus of the SWITCHER menu. For these operations, refer to the user's guides supplied with the respective boards.

## Chapter 5

### DME-5000 Operations

---

Run, DME-5000 Operations .....	A-1
Channel Selection .....	A-4
Manipulating the Image with the Joystick .....	A-6
Background and Edge Functions .....	B-10
EDGE Menu .....	B-17
Erase and Restore—EFFECT & RESTORE Menu .....	B-20
Image Manipulation—PICTURE ADJUST Menu .....	B-24
Video Manipulation—VIDEO MODIFY Menu .....	B-27
LUT Control Operation—LUT CONTROL Menu .....	B-33
Controlling Non-linear Effects—NON-LINEAR CONTROL Menu .....	B-38
Monitor Display Control—GRAPHIC FONT Menu .....	B-44

# DME-5000 Operations

---

This chapter describes how to control one or more units of DME-5000 digital multi effects connected to the DVS-8000/8000C system.

---

## Basic DME-5000 Operations

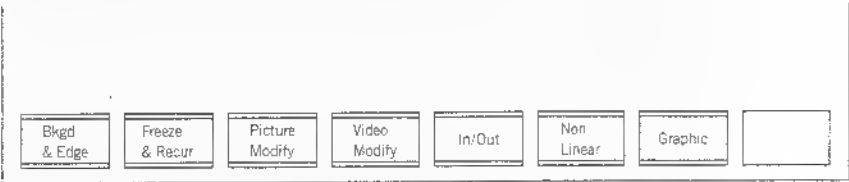
The DME-5000 produces a range of effects and carries out geometrical transformations on an image input from the external video source. Using this control panel, up to four DME-5000 units can be controlled to produce these effects.

The control of the DME-5000 uses the menu control block, and the DME menu in particular. The following are the major steps required. The menu or section used in each step is indicated in parentheses.

- 1** Select the channel to be used. (DELEGATION section in the menu control block)
- 2** Select the video and key signals for the channel. (IN/OUT CONTROL menu)
- 3** Control the effects to be applied to the image.
  - Manipulating the image with the joystick. (Joystick control section)
  - Background and edge control. (BKGD & EDGE menu)
  - Freeze and recursion operations. (FREEZE & RECURSIVE menu)
  - Spatial manipulation. (PICTURE MODIFY menu)
  - Video modification. (VIDEO MODIFY menu)
  - Controlling non-linear effects. (NON LINEAR CONTROL menu)
  - Monitor output control. (GRAPHIC/TEXT menu)

Menus used for DME-5000 operations

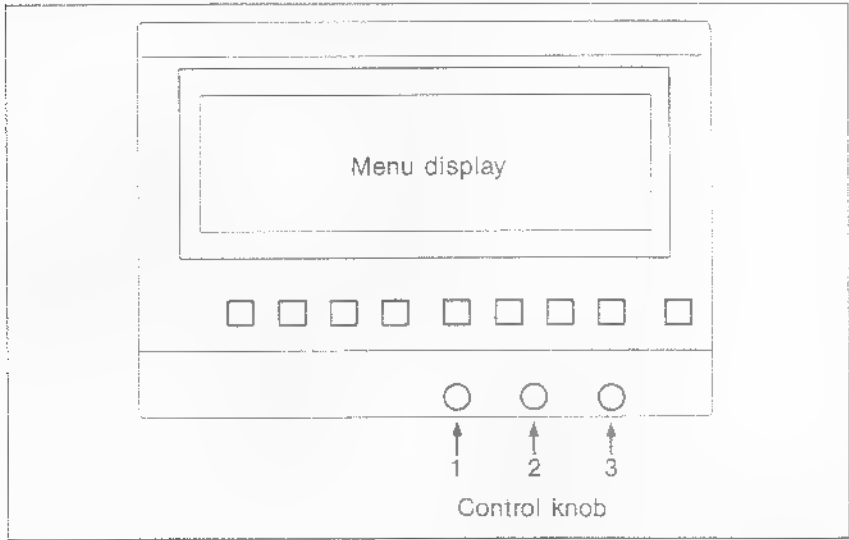
Pressing the DME button in the TOP MENU section makes the following DME menu be displayed.



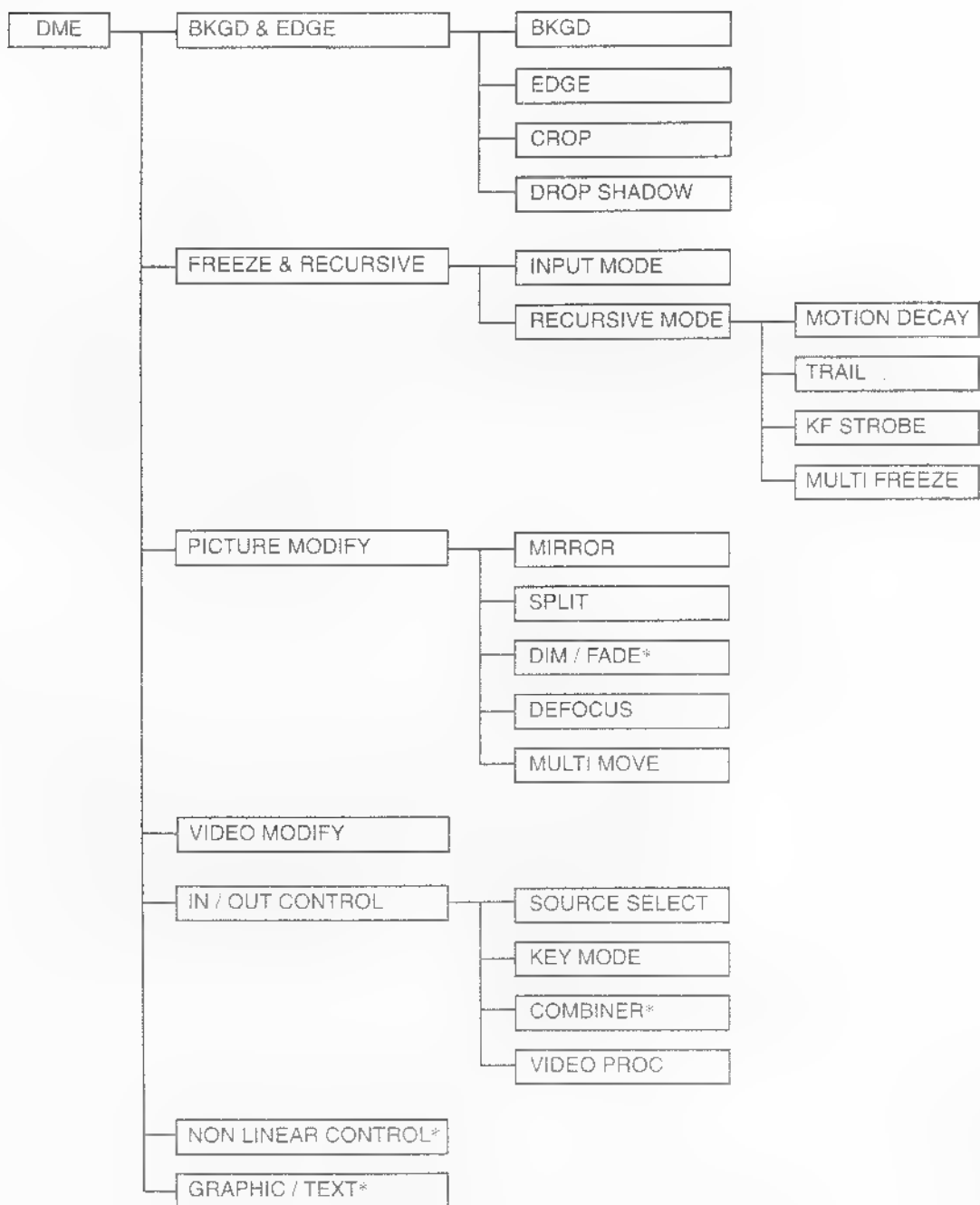
The menus used to produce digital effects compose a menu tree with the DME menu at its top, as shown on the next page. (The asterisks indicate that the respective menus can be used only when appropriate optional circuit boards are installed in the DME-5000 unit.)

About the control knobs

In this section, the control knobs referred to are always those under the menu display. They are numbered 1, 2 and 3 as shown in the figure.



Three control knobs



### Channel Selection

First select the DME channel or channels, or in other words which of the DME-5000 units connected to the switcher system you wish to operate with. Then to use the menu system for control, you must select which channel the menu is attached to. These selections are made with the DELEGATION section of the menu control block.



DELEGATION section

#### Selecting the channel(s) to be used

- 1** Turn the PANL ASIGN button off.
- 2** Press one or more of the DME channel buttons (DME CH1 to CH4).

#### Using the global channel

You can use the global channel to simultaneously operate all (up to four) DME-5000 units which have been selected using the CH ASSIGN menu (see page 9-46).

Press GLBL. In this case there is no need to turn the PANL ASIGN button off.

Turning the GLBL button on causes the DME CH1 to CH4 buttons to be turned off.

---

### **Attaching the menu display to a channel**

The menu display can be attached to only one of the five channels (DME CH1 to CH4 and GLBL), though the menu always controls all channels selected.

- 1** Turn the PANL ASIGN button on.
- 2** Press one of the channel buttons (DME CH1 to CH4 and GLBL) which will light in green.

### **Using the global coordinate frame**

For operation with any selected DME channels (1 to 4), you can use the global coordinate frame which is different from those for the selected channels.

Press the GLBL ON button, turning it on.

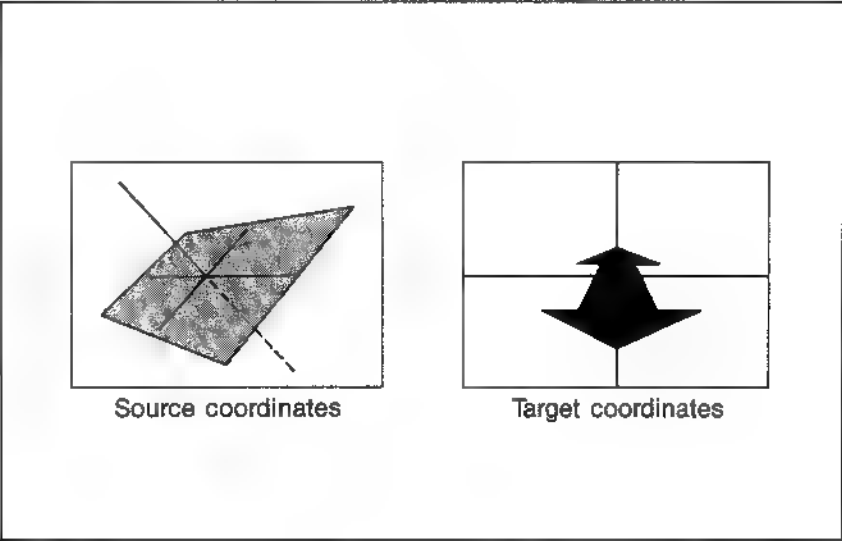
## **Manipulating the Image with the Joystick**

With the joystick you can directly manipulate an image on the screen in three dimensions.

### **Source and target coordinate frames**

Two different sets of x-, y- and z-coordinates are used in describing the movement of an image on the screen.

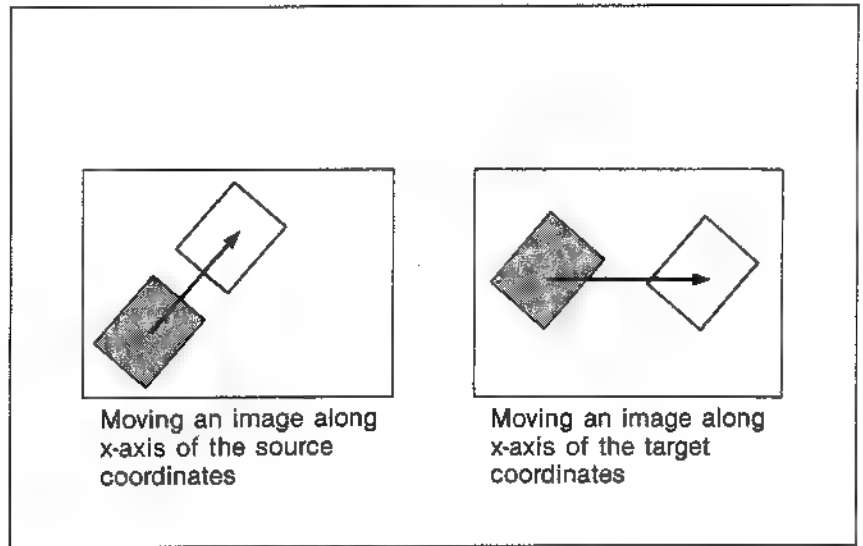
- Source coordinates are relative to the image itself, so that as the image moves the x-, y- and z-axes move with it.
- Target coordinates are relative to the screen in which the image is displayed, so they do not move with the image.



Source and target coordinates

Thus the effect of moving the joystick in the x-direction can be quite different, depending on which coordinate frame is being used, as shown in the figure on the next page.





Movement of an image in the two coordinate frames

### Selecting the coordinate frame

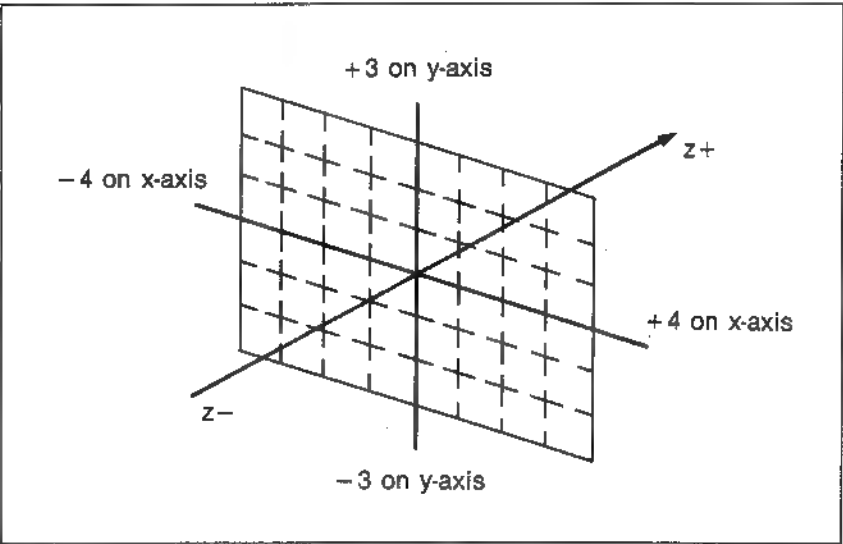
Press **SRCE** to select the source coordinate frame, and **TRGT** to select the target coordinate frame.

**Coordinate scales**

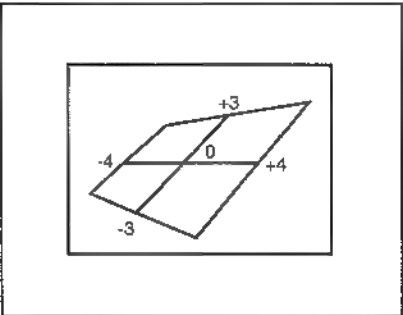
The coordinate values on the x- and y-axes are determined as follows.

- In the source coordinate frame, the origin is at the center of the image, and the edges of the image are at  $x = \pm 4$  and  $y = \pm 3$ .
- In the target coordinate frame, the origin is at the center of the screen, and the edges of the screen are at  $x = \pm 4$  and  $y = \pm 3$ .

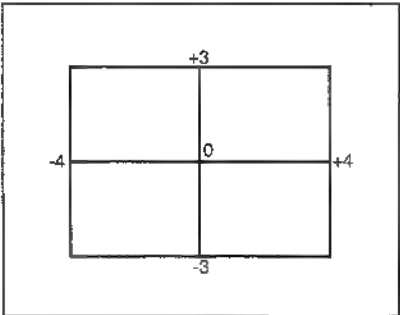
These coordinates are used for shifting and rotating the image. You can directly input numerical coordinate values or relative offsets for x- y- or z-coordinates. The range of each of the coordinate values is from  $-999$  to  $+999$ .



Units for x-, y- and z-coordinates



Units for source coordinates



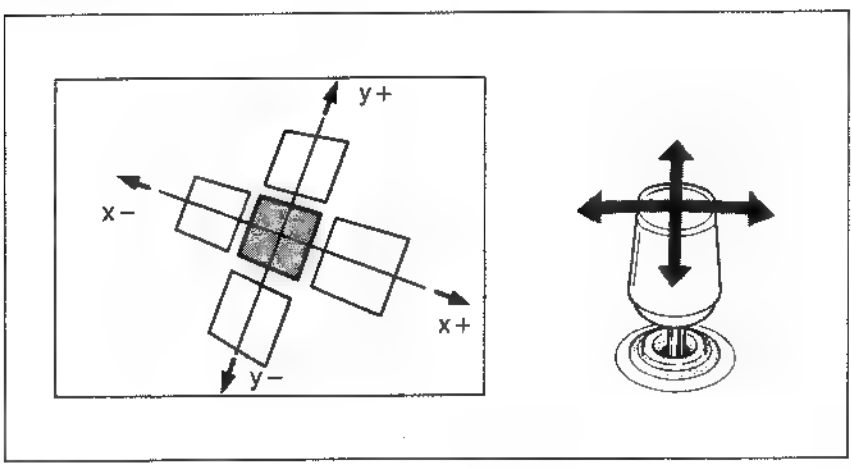
Units for target coordinates

**Image movement and resizing**

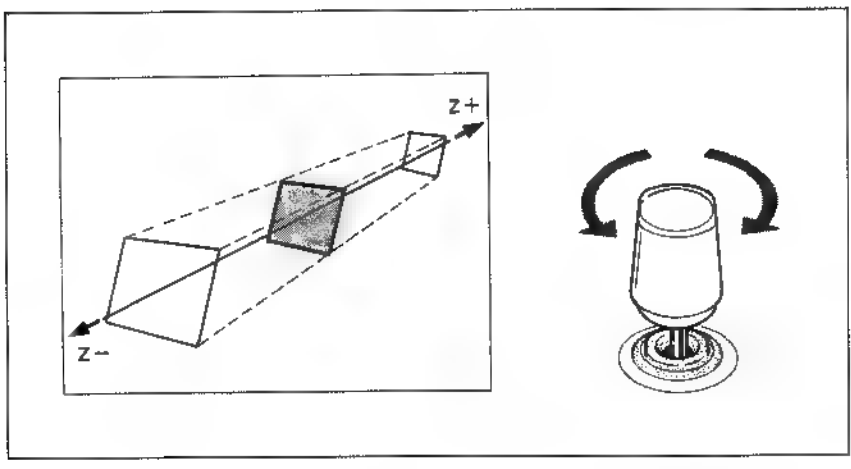
**Moving the image with the LOC XYZ button**

Press the LOC XYZ button and operate the joystick to move the image along the x-, y- or z-axes in the currently selected coordinate frame.

Whichever coordinate frame is selected, the image moves in perspective.



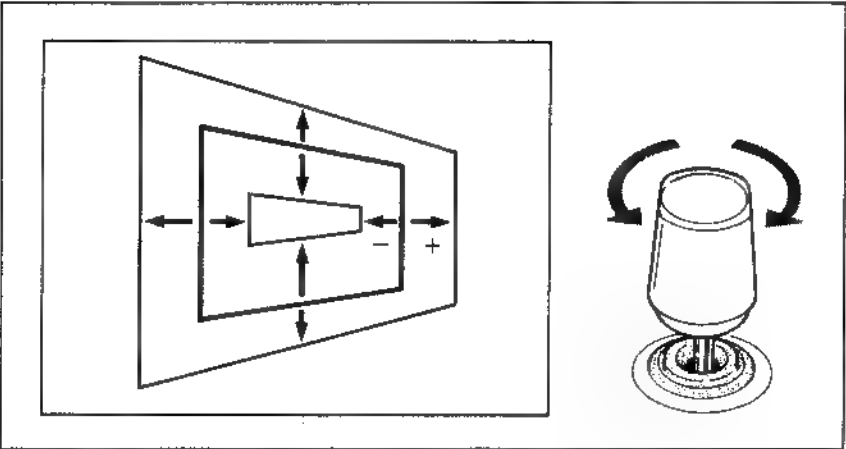
Moving in the x- and y-directions in the source coordinate frame



Moving in the z-directions in the source coordinate frame

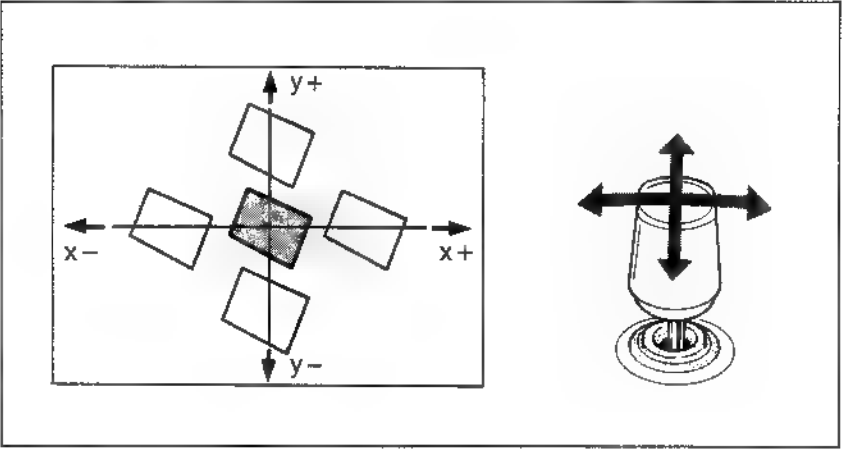
**Moving and resizing the image with the LOC SIZE button**  
Press the LOC SIZE button and operate the joystick to move the image along the x- or y-axes or to resize it, in the currently selected coordinate frame.

**In the source coordinate frame:** Movement in the x- and y-axes is exactly the same as with the LOC XYZ button. Moving the joystick in the z-axis changes the size and perspective of the image.



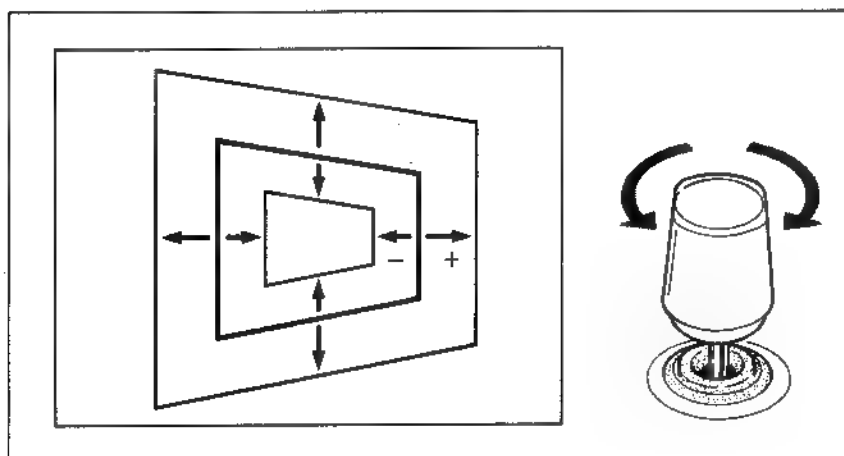
Resizing in the source coordinate frame

**In the target coordinate frame:** Moving the joystick in the x- and y-axes displaces the image in the plane of the screen, that is without perspective.



Moving along the x- and y-axes of the target coordinate frame

Moving the joystick in the z-axis changes the size of the image on the screen, but in contradistinction to resizing with the LOC XYZ button, the perspective does not change.



Resizing in the target coordinate frame

#### **To move along a specified axis only**

Move the joystick while holding down one of the X, Y and Z buttons.

#### **Specifying the amount of movement using the numeric keypad**

- 1** Press one of the X, Y and Z buttons to specify the direction of movement.  
A pop-up window for entering a value for the corresponding coordinate will appear on the menu display.
- 2** Enter the numeric value for the corresponding coordinate on the numeric keypad, and press ENTER.  
To enter an adjustment to the position rather than an absolute value, press TRIM instead of ENTER.

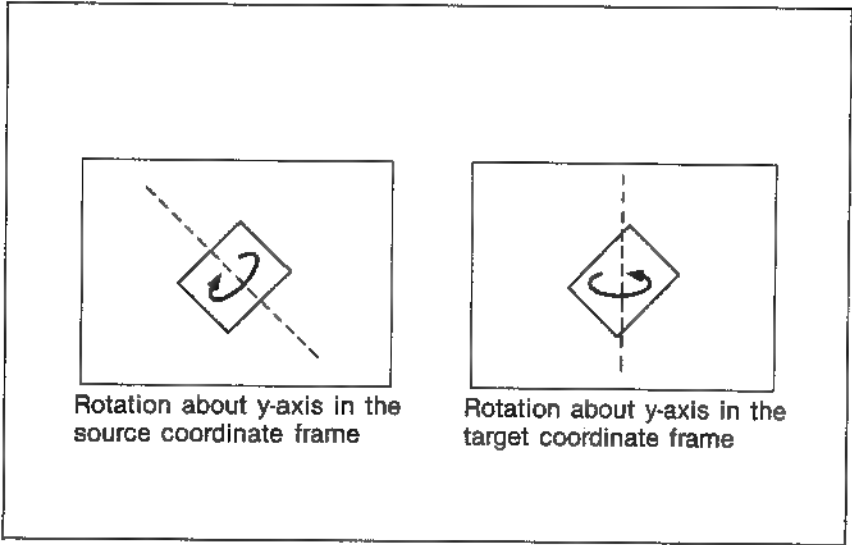
#### **Centering the image**

Press CTR twice. Pressing CTR first brings the image to the closest of the detents, or system-defined positions. Pressing it again positions the image at the center of the coordinates.

Rotating the image

Rotating the image about the x-, y- or z-axis

- 1 Press ROT.
- 2 Move the joystick in the direction of rotation.



Rotation in source and target coordinate frames

### Specifying the amount of rotation using the numeric keypad

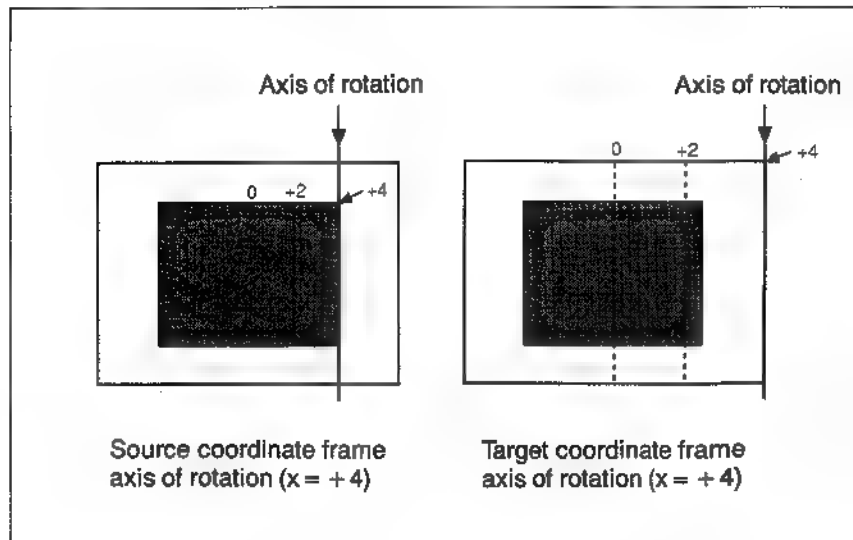
All rotations are measured in terms of a whole turn. Thus, +1.00 represents a 360° rotation in the positive direction about an axis, that is, clockwise about the axis looking toward the positive direction of the axis. Similarly -1.00 represents a whole turn in the opposite direction.

For example, +0.25 represents a 90° rotation, and +5 represents five whole turns. The range for rotation values is from -999 to +999; values larger than 1 allow multiple rotations through the course of an effect.

- 1** Press ROT.
- 2** Press one of the X, Y and Z buttons to specify the axis of rotation.  
A pop-up window for entering an amount of rotation will appear on the menu display.
- 3** Enter the amount of rotation on the numeric keypad and press ENTER.

### Moving the axes of rotation

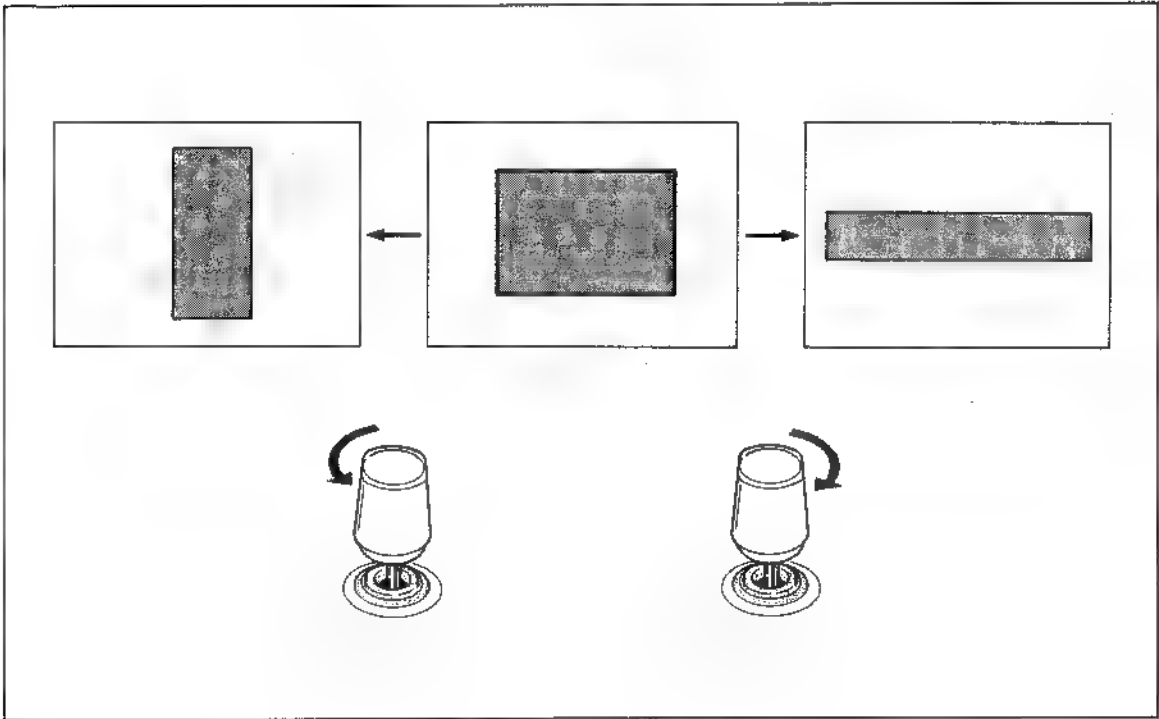
- 1** Press AXIS LOC.
- 2** To move the axes, use the joystick, or enter a rotation value from the numeric keypad and press ENTER.



Manipulating the aspect ratio, skew, and perspective

Changing the aspect ratio

- 1 Press SRCE.
- 2 Press ASP/SKEW/PERS.
- 3 Move the joystick in the z-axis.

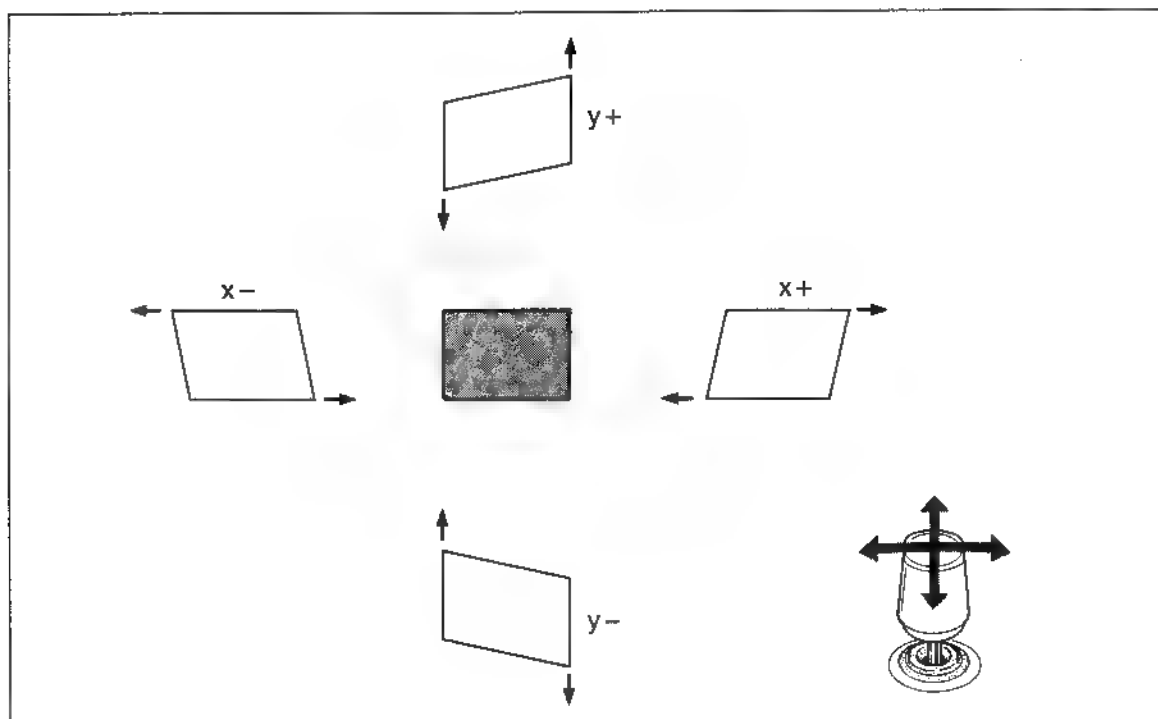


Changing the aspect ratio



### Skewing the image

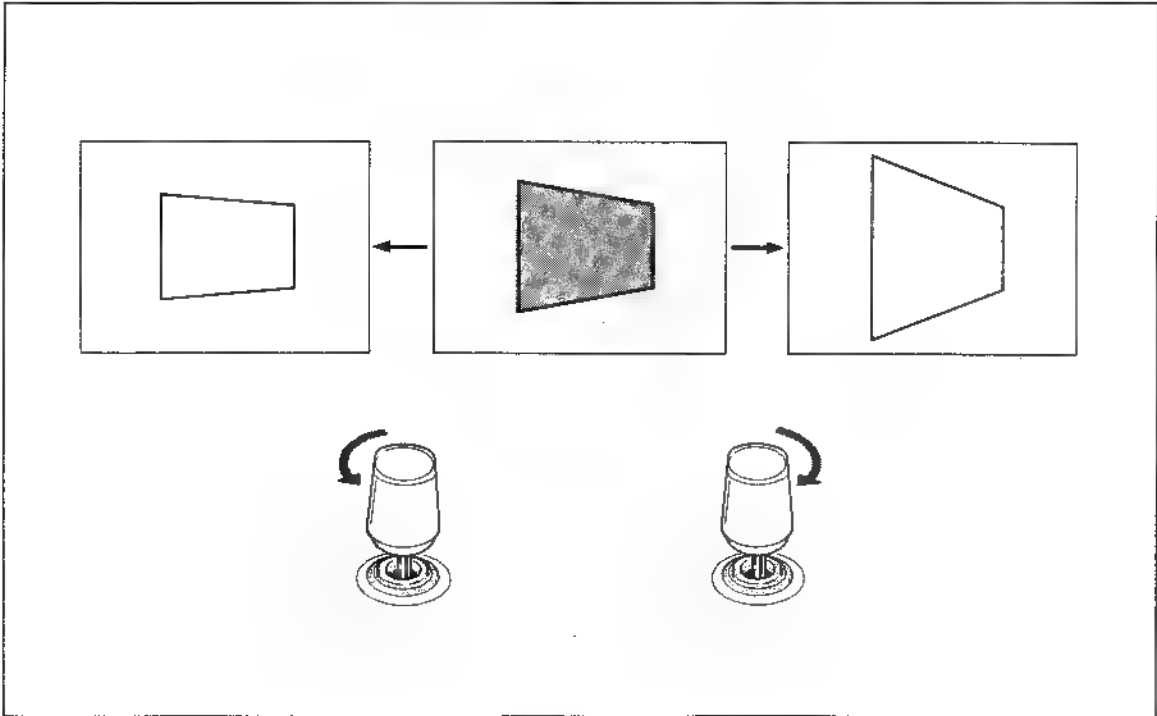
- 1** Press SRCE.
- 2** Press ASP/SKEW/PERS.
- 3** Move the joystick in the x- or y-axis as desired.



Skewing the image

Changing the perspective

- 1 Press TRGT.
- 2 Press ASP/SKEW/PERS.
- 3 Move the joystick in the x-, y- or z-axis as desired. Moving the joystick in the x- and y-axes moves the perspective projection point for the image. Movement in the z-axis changes the depth of perspective.



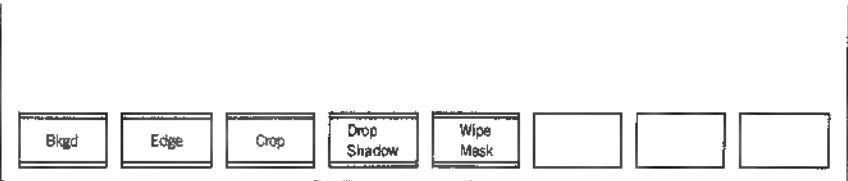
Changing the perspective

---

# Background and Edge Functions—BKGD & EDGE Menu

The BKGD & EDGE menu provides background functions (coloring and cropping) and edge functions such as adding a border.

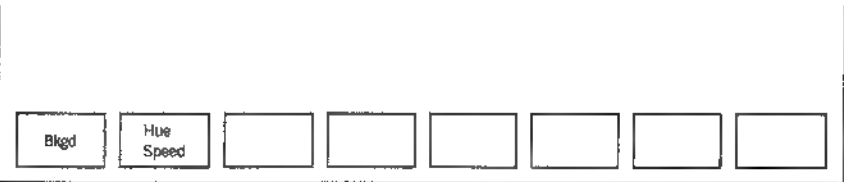
Menu path: DME → F1 (Bkgd & Edge)



## Coloring the background

The BKGD menu allows you to black out the background, or apply a color.

Menu path: DME → F1 (Bkgd & Edge) → F1 (Bkgd)



## Blacking out the background

Press F1 (Bkgd), turning it off.

### Applying a color to the background

- 1** Press F1 (Bkgd), turning it on.
- 2** Adjust the background color with the control knobs as follows.
  - Control 1: Luminance.
  - Control 2: Saturation.
  - Control 3: Hue.

### Producing a changing background color

- 1** Press F2 (Hue Speed), turning it on.
- 2** Adjust the rate at which the hue changes with control 3. This value is added to the current hue value for each new field.

## Edge settings

This menu allows you to apply a border or make a soft edge.

Menu path: DME → F1 (Bkgd & Edge) → F2 (Edge)



### Applying a border



- 1** Press F1 (Border), turning it on.
- 2** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border all'.
- 3** Use control 1 to adjust the border width.
- 4** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border color'.
- 5** Adjust the border color with the control knobs as follows.
  - Control 1: Luminance.
  - Control 2: Saturation.
  - Control 3: Hue.

### Applying a soft border

- 1** Press F1 (Border), turning it on.
- 2** Press F2 (Soft), turning it on.
- 3** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border all'.
- 4** Adjust the control knobs as follows.
  - Control 1: Border width.
  - Control 2: Inner softness.
  - Control 3: Outer softness.

### Producing a changing border color

- 1** Press F6 (Hue Speed), turning it on.
- 2** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border color'.
- 3** Adjust the rate at which the hue changes with control 3.
  - This value is added to the current hue value for each new field.

### Making the corners rounded

Press F3 (Round Corner), turning it on.

Note that if the softness (F2) is set to 0 no rounding will occur.

---

### Adjusting the four border sides separately

- 1** Press F1 (Border), turning it on.
- 2** Press F4 (Sep Edge), turning it on.
- 3** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border left', 'Border right', 'Border top' or 'Border bottom'.
- 4** Adjust the control knobs as follows.  
Note that controls 2 and 3 are only enabled if F2 (Soft) is on.  
Control 1: Border width.  
Control 2: Inner softness.  
Control 3: Outer softness.
- 5** Press F7 ( ↑ ) or F8 ( ↓ ) to step the cursor through the other sides, making the corresponding adjustments.

### Copying the border width from one side to all the others

- 1** Press F1 (Border), turning it on.
- 2** Press F4 (Sep Edge), turning it on.
- 3** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Border left', 'Border right', 'Border top' or 'Border bottom'.
- 4** Press F5 (Same Edge).

### Making the edges soft

- 1** With F1 (Border) off, press F2 (Soft), turning it on.
- 2** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Softness all'.
- 3** Adjust the softness with control 1.

### Adjusting the softness of the edges separately

- 1** With F1 (Border) off, press F2 (Soft), turning it on.
- 2** Press F4 (Sep Edge), turning it on.
- 3** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Softness left', 'Softness right', 'Softness top' or 'Softness bottom'.
- 4** Adjust the softness with control 1.
- 5** Press F7 ( ↑ ) or F8 ( ↓ ) to step the cursor through the other sides, making the corresponding adjustments.

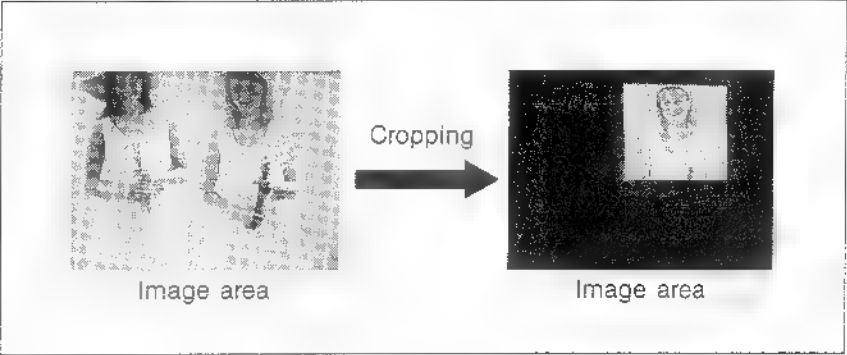
### Copying the softness from one side to all the others

- 1** With F1 (Border) off, press F2 (Soft), turning it on.
- 2** Press F4 (Sep Edge), turning it on.
- 3** Press F7 ( ↑ ) or F8 ( ↓ ) to position the cursor on 'Softness left', 'Softness right', 'Softness top' or 'Softness bottom'.
- 4** Press F5 (Same Edge).



Cropping

The CROP menu allows you to change the effective image area.



Menu path: DME → F1 (Bkgd & Edge) → F3 (Crop)



### Cropping the image

- 1** Press F1 (Crop), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on 'Crop H', 'Crop V' or 'Crop HV'.
- 3** Adjust the control knobs as follows.

When cursor is on 'Crop H':

- Control 1: Adjusts cropping on left side.
- Control 2: Adjusts cropping on right side.
- Control 3: Adjusts cropping on both the left and right sides.

When cursor is on 'Crop V':

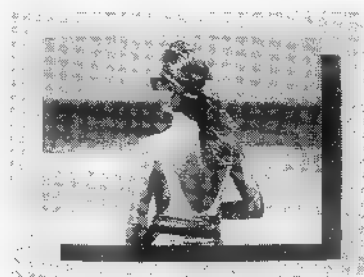
- Control 1: Adjusts cropping at the top.
- Control 2: Adjusts cropping at the bottom.
- Control 3: Adjusts the top and bottom cropping amounts.

When cursor is on 'Crop HV':

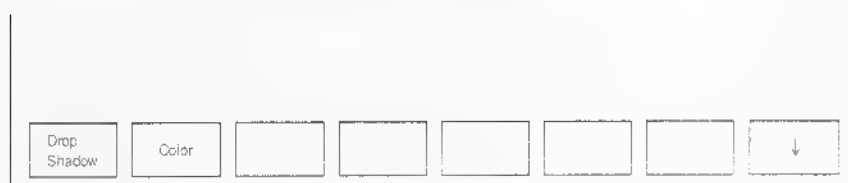
- Control 1: Adjusts the left and right cropping amounts.
- Control 2: Adjusts the top and bottom cropping amounts.
- Control 3: Adjusts the cropping amounts on all four sides.

## Drop shadows

The DROP SHADOW menu allows you to add a drop shadow, which can also be colored.



Menu path: DME → F1 (Bkgd & Edge) → F4 (Drop Shadow)



### Adding ■ drop shadow

- 1** Press F1 (Drop Shadow), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on 'Shadow position'.
- 3** Adjust the control knobs as follows.
  - Control 1: Horizontal position.
  - Control 2: Vertical position.
  - Control 3: Density.

### Coloring the drop shadow

- 1** Press F2 (Color), turning it on.
- 2** Press F8 (↓) to position the cursor on 'Shadow color'.
- 3** Adjust the color with the control knobs as follows.
  - Control 1: Luminance.
  - Control 2: Saturation.
  - Control 3: Hue.

#### **Note**

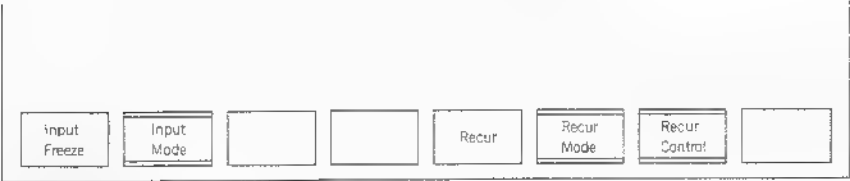
The drop shadow is delayed by one frame against the video image. Therefore, when the system is in one frame delay mode, the drop shadow output is delayed by two frames against the video input. To prevent this delay, you can set the system for two frame delay mode. In this case, note that two frame mode operation is effective only when the drop shadow function is on and that system operation goes back to one frame delay mode when the drop shadow function is off. System delay mode setting is carried out from the OPERATION MODE menu (see page 9-43.)

The drop shadow function also cannot be used together with effects from the RECURSIVE MODE menu.

# Freeze and Recursion—FREEZE & RECURSIVE Menu

The FREEZE & RECURSIVE menu provides freezing and strobing effects, which can be applied both to the input image (i.e. before it is transformed) and to the transformed output image. By recalling a previous frame which has been stored, it also applies a range of recursive image effects to the output image.

Menu path: DME → F2 (Freeze & Recur)



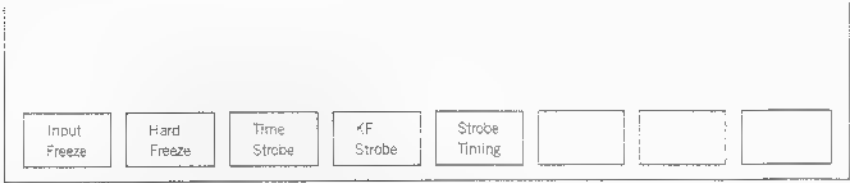
Pressing F7 (Recur Control) gets you directly to the currently selected one of the RECURSIVE MODE submenus (MOTION DECAY, TRAIL, KF STROBE, MULTI FREEZE).

## Freezing and strobing the input image

Use the input mode menu to apply these effects to the input image.

In the FREEZE & RECURSIVE menu, press F2 (Input Mode), to display the INPUT MODE menu.

Menu path: DME → F2 (Freeze & Recur) → F2 (Input Mode)

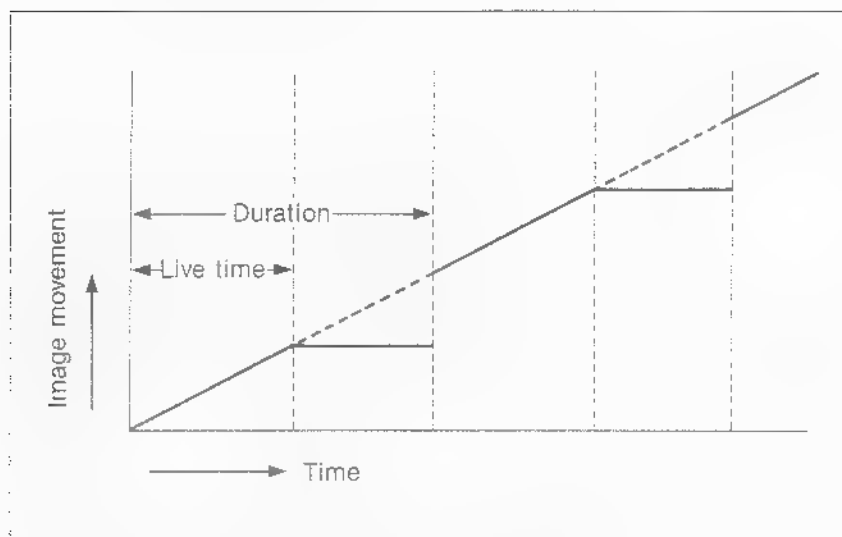


## Freezing the input image completely

- 1 In the INPUT MODE menu press F2 (Hard Freeze), turning it on.
- 2 Press F1 (Input Freeze), turning it on.

### Fixed speed strobing

- 1** In the INPUT MODE menu press F3 (Time Strobe), turning it on.
- 2** Press F1 (Input Freeze), turning it on.
- 3** Adjust the control knobs as follows.  
Control 1: Strobe duration (period).  
Control 2: Live time.



Strobe duration and live time

The live time is the period in which the video is not frozen. If set to more than the strobe duration the video is live for the whole strobe.

- 4** Press F5 (Strobe Timing) and select either field or frame timing.

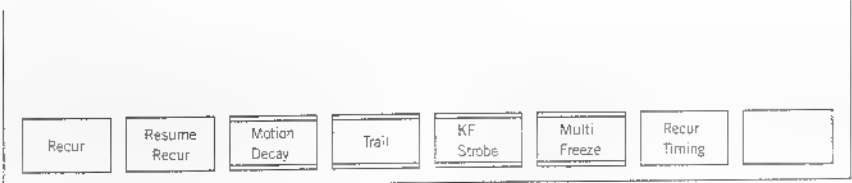
### Strobing by key frames

- 1** In the INPUT MODE menu press F4 (KF Strobe), turning it on.
- 2** Press F1 (Input Freeze), turning it on.

## Output image recursion effects

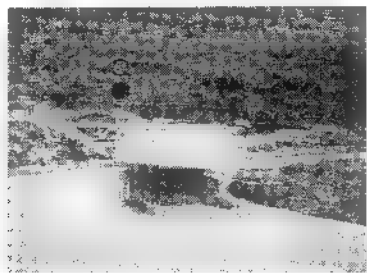
These effects use the image stored in recursive memory, and are accessed from the RECURSIVE MODE menu.

Menu path: DME → F2 (Freeze & Recur) → F6 (Recur Mode)

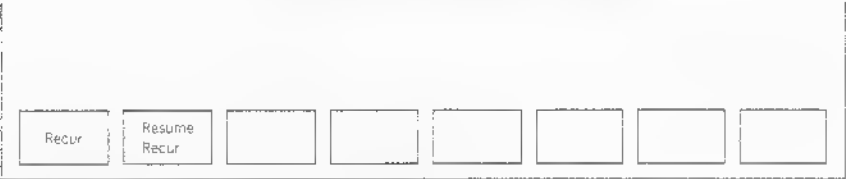


**Blurring motion**

Use the MOTION DECAY menu to cause any motion in the picture to be blurred. The MOTION DECAY menu allows not only video decay (that is, blurring caused by the motion within the video image and by the transformation of the image) but also allows key decay, that is trails left by a key signal. The trails can also be given a particulate appearance—so-called stardust.



Menu path: DME → F2 (Freeze & Recur) → F6 (Recur Mode) → F3 (Motion Decay)



- 1** Press F1 (Recur), turning it on.
- 2** Adjust the control knobs as follows.
  - Control 1 adjusts the amount of video decay.
  - Control 2 adjusts the amount of key decay.
  - Control 3 adjusts the stardust factor.



**Clearing the recursion memory for each key frame**

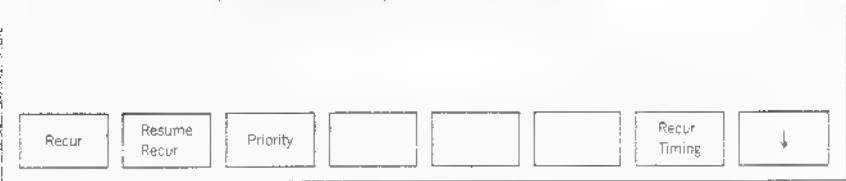
In the RECURSIVE MODE menu, press F2 (Resume Recur), turning it on.

**Making trails**

By grabbing the freeze frames at regular intervals, the image can be made to leave a trail. Access the TRAIL menu from the RECURSIVE MODE menu.



Menu path: DME → F2 (Freeze & Recur) →  
F6 (Recur Mode) → F4 (Trail)



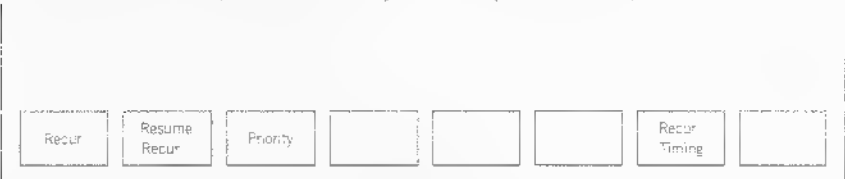
- 1** Press F1 (Recur), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on ‘Decay’.
- 3** Adjust the control knobs as follows.
  - Control 1 adjusts the degree of decay, or blurring.
  - Control 2 adjusts the stardust factor.
- 4** Press F8 ( ↓ ) to position the cursor on ‘Time strobe’.

- 5 Adjust the control knobs as follows.  
Control 1: Strobe duration (period).  
Control 2: Live time.  
The live time is the period in which the video is not frozen.  
If set to more than the strobe duration the video is live for the whole strobe.
- 6 Press F7 (Recur Timing), and select field or frame strobe timing.

**Overlaying the freeze frame on the live frame**  
Press F3 (Priority), turning it on.

**Strobing by key frames**  
To grab the freeze frame each time the key frame changes, use the KF STROBE menu.

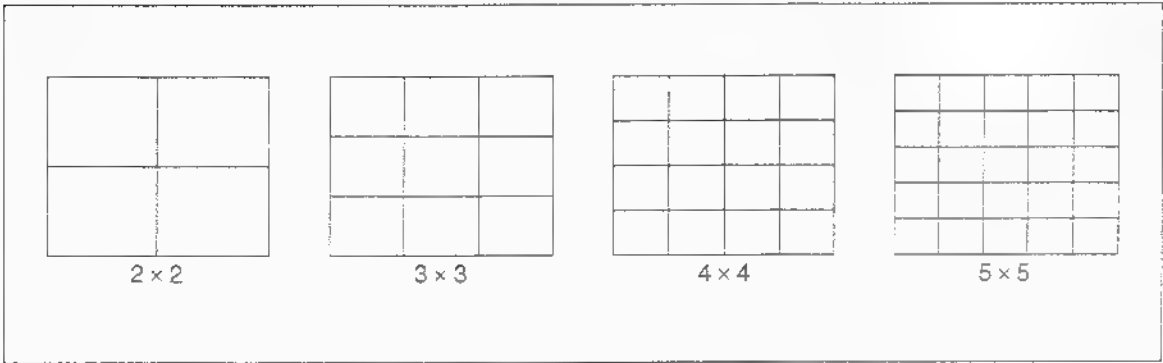
Menu path: DME → F2 (Freeze & Recur) →  
F6 (Recur Mode) → F5 (KF Strobe)



The remaining operations are the same as described under “Making trails” on page 5-31, except that there are no strobe timing settings.

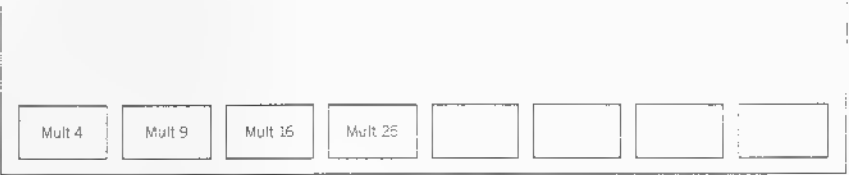
**The multifreeze function**

A multifreeze effect is a composite formed by a set of frozen pictures neatly arranged in a grid. Use the two multifreeze menus (MULTIFREEZE MODE and MULTIFREEZE) to select the effect required.



Multifreeze grids

Menu path: DME → F2 (Freeze & Recur)→  
F6 (Recur Mode) → F6 (Multi Freeze)



The first multifreeze menu (MULTIFREEZE MODE) sets the basic multifreeze mode. Press one of the buttons F1 to F4 to select the grid size (4, 9, 16 or 25), and move to the second multifreeze menu (MULTIFREEZE). The operations in this menu are the same as described above under “Making trails” on page 5-31, except that there are no strobe timing settings. For manipulating the position of a multifreeze image, the following joystick operations are possible.

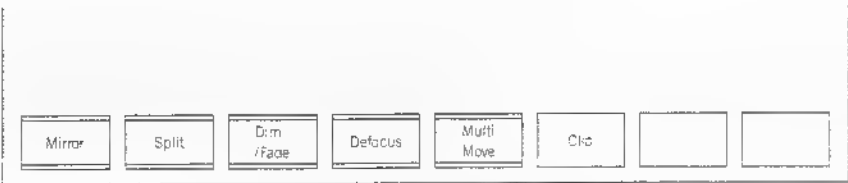
- Press LOC XYZ or LOC SIZE, and move the image along the x- and y-axes in the source coordinate frame.
- Press the LOC XYZ button, and move the image along the x- and y-axes in the target coordinate frame.

Movement along the z-axis is not possible for a multifreeze image.

Spatial Manipulation—PICTURE MODIFY Menu

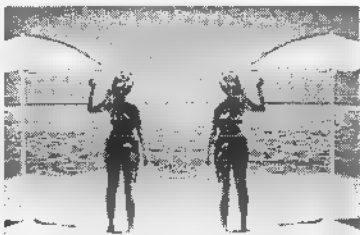
The PICTURE MODIFY menu provides a range of spatial manipulations for the image as a whole.

Menu path: DME → F3 (Picture Modify)

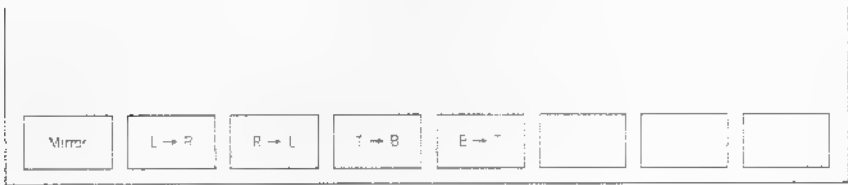


Mirror functions

These functions allow parts of the image to be folded, or reflected about a horizontal or vertical axis. Access them from the MIRROR menu.



Menu path: DME → F3 (Picture Modify) → F1 (Mirror)



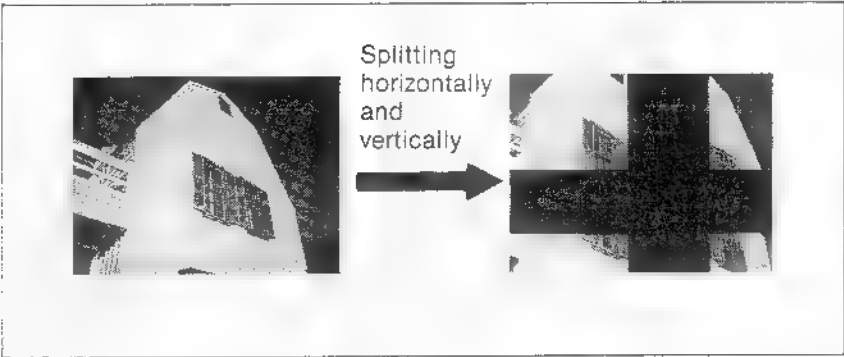
---

### Reflecting the image

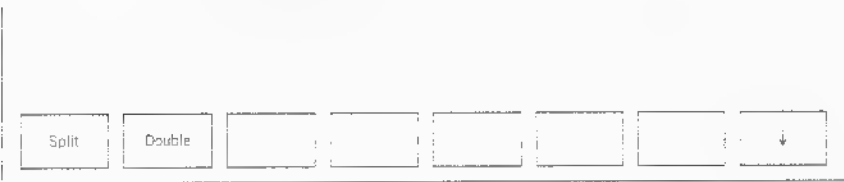
- 1** In the MIRROR menu press F1 (Mirror), turning it on.
- 2** Make one or more of the following selections.
  - F2 (L → R): Folds the left half of the picture to the right half.
  - F3 (R → L): Folds the right half of the picture to the left half.
  - F4 (T → B): Folds the top half of the picture to the bottom half.
  - F5 (B → T): Folds the bottom half of the picture to the top half.
  - Combination of F2 and F3: Flips the whole picture about a vertical axis.
  - Combination of F4 and F5: Flips the whole picture about a horizontal axis.

Splitting functions

The SPLIT menu allows the image to be split in a variety of ways.



Menu path: DME → F3 (Picture Modify) → F2 (Split)



Splitting horizontally and vertically at the same time

- 1 Press F1 (Split), turning it on.
- 2 Press F8 ( ↓ ) to position the cursor on 'Split All'.
- 3 Adjust the control knobs as follows.
  - Control 1: Shifts left and right portions by the same amount.
  - Control 2: Shifts top and bottom portions by the same amount.
  - Control 3: Shifts all four portions by the same amount.

---

### **Splitting horizontally**

- 1** Press F1 (Split), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on 'Shift H'.
- 3** Adjust the control knobs as follows.
  - Control 1: Shifts the left portion.
  - Control 2: Shifts the right portion.
  - Control 3: Shifts both left and right portions by the same amount.

### **Splitting vertically**

- 1** Press F1 (Split), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on 'Shift V'.
- 3** Adjust the control knobs as follows.
  - Control 1: Shifts the top portion.
  - Control 2: Shifts the bottom portion.
  - Control 3: Shifts both top and bottom portions by the same amount.

### **Determining the splitting point**

- 1** Press F1 (Split), turning it on.
- 2** Press F8 ( ↓ ) to position the cursor on 'Split point'.
- 3** Adjust the control knobs as follows.
  - Control 1: Adjusts the splitting point to right or left.
  - Control 2: Adjusts the splitting point up or down.
- 4** Use the following procedures to make the split in the required direction.

### **Filling in the split**

To fill in the split with the input image, press F2 (Double).

Dimming and fading

These two effects both give added effect to perspective. The dimming function reduces the brightness of parts of the image further away on the z-axis, whereas the fade function makes them fade into the background. These two functions are both provided on the DIM & FADE menu; note that they cannot be used simultaneously. These functions require an optional BKDM-5020/5021 digital combiner board.



Menu path: DME → F3 (Picture Modify) → F3 (Dim/Fade)

Dim	Fade						
-----	------	--	--	--	--	--	--



---

## Dimming

- 1** Press F1 (Dim), turning it on.
- 2** Adjust the control knobs as follows.
  - Control 1: Adjusts the point where dimming starts.
  - Control 2: Adjusts the gain to vary the rate at which the picture dims with depth.

## Fading

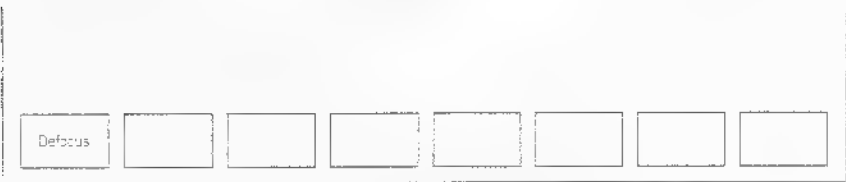
- 1** Press F2 (Fade), turning it on.
- 2** Adjust the control knobs as follows.
  - Control 1: Adjusts the point where fading starts.
  - Control 2: Adjusts the gain to vary the rate at which the picture fades with depth.

Defocusing

The DEFOCUS menu allows the entire image to be defocused.



Menu path: DME → F3 (Picture Modify) → F4 (Defocus)

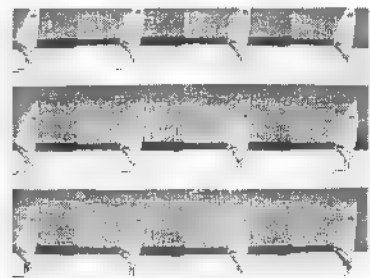


Defocusing the entire image

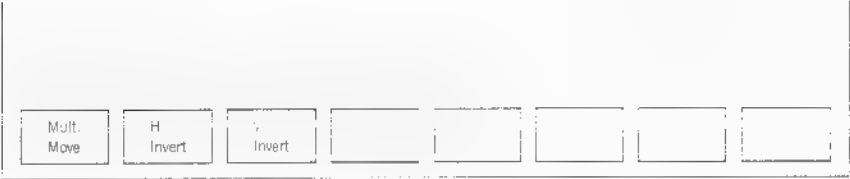
- 1** Press F1 (Defocus), turning it on.
- 2** Adjust the degree of defocusing with control 1.

Multimove

This is a tiling function, which fills the screen with reduced copies of the image. You can select the number of images in the array, and also have alternate images reversed in either direction.



Menu path: DME → F3 (Picture Modify) → F5 (Multi Move)



Tiling the screen with reduced copies

- 1 Press F1 (Multi Move), turning it on.
- 2 Press F8 ( ↓ ) to position the cursor on 'Size/ Aspect'.
- 3 Adjust the control knobs as follows.
  - Control 1: Reduces image size. Minimum is 1/128, maximum is full size.
  - Control 2: Controls the aspect ratio of the reduced images.
- 4 Press F8 ( ↓ ) to position the cursor on 'Position'.
- 5 Adjust the control knobs as follows.
  - Control 1 adjusts the horizontal position.
  - Control 2 adjusts the vertical position.

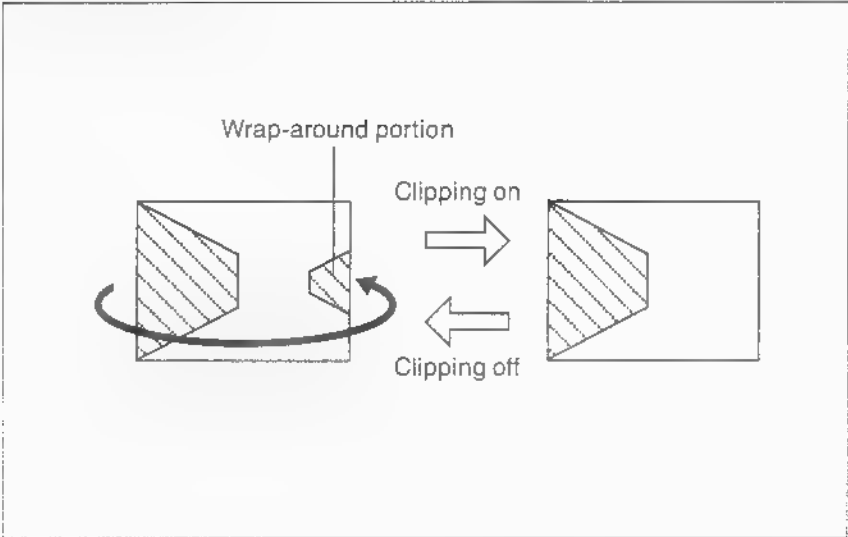
**Inverting alternate rows or columns**

To invert alternate columns laterally, press F2 (H invert).

To invert alternate rows vertically, press F3 (V invert).

**Clipping**

When using extreme perspective effects, it is possible for a part of the image to wrap-around, and appear at the opposite side of the screen. Clipping the image to the screen removes this wrap-around portion.



F6 (Clip) in the PICTURE MODIFY menu toggles clipping on or off.

# Video Modification—VIDEO MODIFY Menu

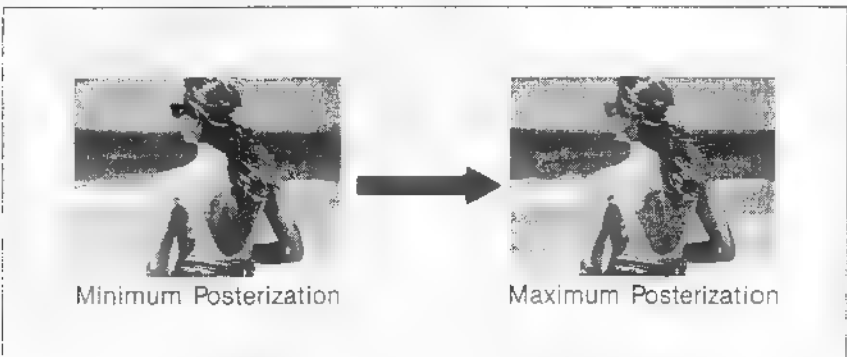
The VIDEO MODIFY menu offers a range of effects which modify the video signal.

Menu path: DME → F4 (Video Modify)



## Posterization and solarization

These two effects work by reducing the number of quantization levels. Posterization reduces the quantization levels of the luminance signal, and solarization reduces the quantization levels of the chrominance signal.

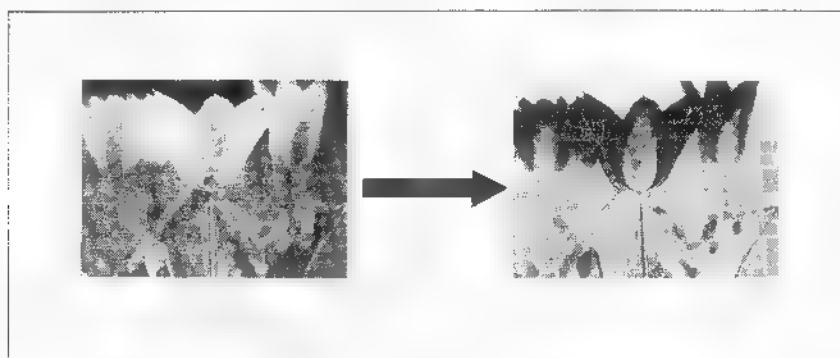


### Applying posterization and solarization simultaneously

- 1** Press F1 (Poster), turning it on.
- 2** Press F2 (Solar), turning it on.
- 3** Press F8 ( ↓ ) to position the cursor on 'Poster/Solar'.
- 4** Adjust the control knobs as follows.
  - Control 1: Adjusts the posterization.
  - Control 2: Adjusts the solarization.

### Negative video

This function makes an image negative in terms of both chrominance and luminance.



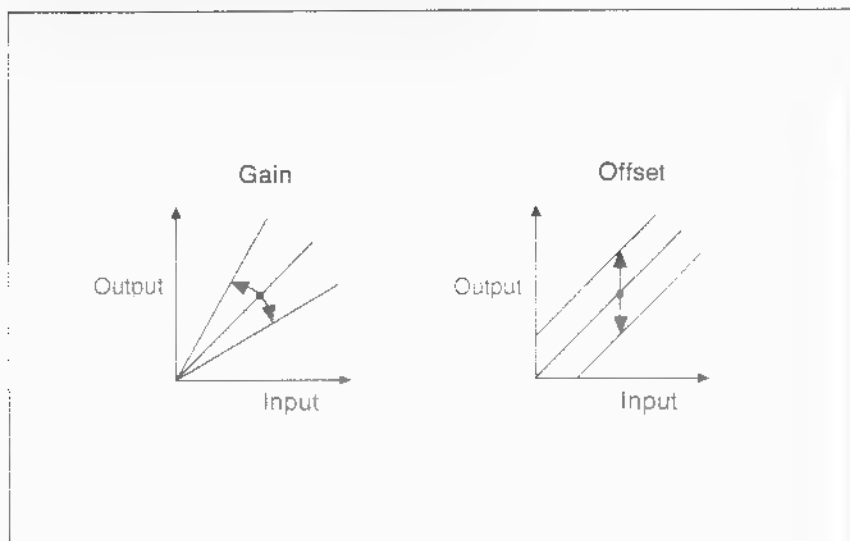
Press F3 (Nega), turning it on, to switch to negative video.

## Contrast

The contrast is adjustable on both luminance and chrominance signals.

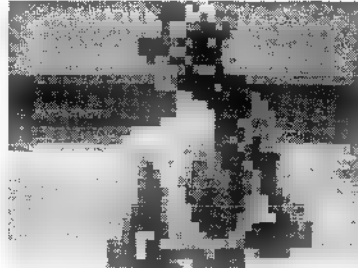
### Adjusting the contrast

- 1** Press F4 (Contrast), turning it on.
- 2** Press F8 (↓) to position the cursor on 'Contrast Y'.
- 3** Adjust the control knobs as follows.
  - Control 1 adjusts the gain of the luminance signal.
  - Control 2 adjusts the offset of the luminance signal.
- 4** Press F8 (↓) to position the cursor on 'Contrast C'.
- 5** Adjust the control knobs as follows.
  - Control 1 adjusts the gain of the chrominance signal.
  - Control 2 adjusts the offset of the chrominance signal.



### Mosaic function

This effect divides the screen into rectangles, and averages out the video signals over each rectangle, producing a mosaic effect.



#### Producing a mosaic effect

- 1** Press F5 (Mosaic), turning it on.
- 2** Press F8 ( / ) to position the cursor on 'Mosaic'.
- 3** Adjust the control knobs as follows.
  - Control 1: Adjusts the mosaic size. Minimum is 1/128, maximum is full image size.
  - Control 2: Adjusts the aspect ratio of the mosaic rectangles.

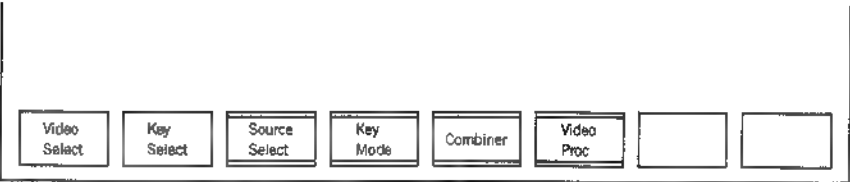


---

# I/O Control Operations—IN/OUT CONTROL Menu

The IN/OUT CONTROL menu allows you to select the input and output signals, and provides settings including those for configuring the optional combiners.

Menu path: DME → F5 (In/Out)



### Selecting the input video and key signals

When the DME-5000 unit is connected to a source selector, two video signals can be selected and handled as “front video” and “back video.” Similarly front and back keys can also be selected. The following can be used as source selectors: a BVS-V1201 video routing switcher, a DVS-V1201 digital video switcher, or a BKDM-5080 source selector.

The AUX 1 to 4 buses of the DVS-8000/8000C can also be used as the DME source selector. On the source selector, only the DME image currently appearing on the monitor (either the front video or back video) can be switched.

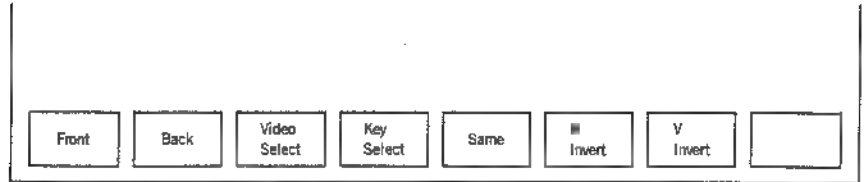
#### Selecting a video or key to replace the video or key currently output to the monitor

- 1** For video selection press F1 (Video Select), or for key selection press F2 (Key Select).  
On the menu display will appear a pop-up window labeled “front #” or “back #” depending on whether the video or key currently output to the monitor is ■ front or back one, prompting you to enter the number of the desired video or key input.
- 2** Enter the number of the desired video or key input on the numeric keypad and press ENTER.  
The video or key currently output to the monitor will be switched to the selected video or key.

### Selecting the front video or front key

- 1 Press F3 (Source Select) to get the SOURCE SELECT menu.

Menu path: DME → F5 (In/Out) → F3 (Source Select)



- 2 Press F1 (Front).
- 3 For video selection press F3 (Video Selelec), or for key selection press F4 (Key Select).  
A pop-up window for entering an input video or key number will appear on the menu display.
- 4 Enter the number of the desired front video or key on the numeric keypad and press ENTER.

### Selecting the back video or back key

- 1 In the SOURCE SELECT menu press F2 (Back).
- 2 For video selection press F3 (Video Select), or for key selection press F4 (Key Select).  
A pop-up window for entering an input video or key number will appear on the menu display.
- 3 Enter the number of the desired back video or key on the numeric keypad and press ENTER.

### **Making the back video/key the same as the front video/key**

After selecting the front video/key, press F5 (Same) in the SOURCE SELECT menu.

The signal selected as the front video/key will also be used as the back video/key.

### **Reversing the back video**

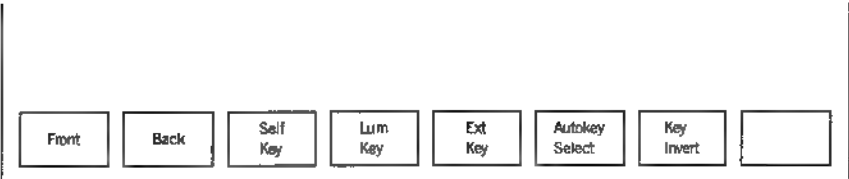
From the SOURCE SELECT menu, you can reverse the back video either horizontally or vertically.

- To reverse horizontally: Press F6 (H Invert).
- To reverse vertically: Press F7 (V Invert).

## Selecting the key mode

The KEY MODE menu offers a variety of different modes for the key being used.

Menu path: DME → F5 (In/Out) → F4 (Key Mode)



## Selecting the type of key used

- 1** Press any one of the buttons F3 to F6.
  - F3 (Self Key): Use the whole image as the key.
  - F4 (Lum Key): Use the luminance signal of the input video as the key.
  - F5 (Ext Key): Use the external key signal selected in the SOURCE SELECT menu as the key signal.
  - F6 (Auto Key Select): Use the external key signal delegated to the input video in the KEY SOURCE ASSIGN menu as the key signal (see page 9-58).
- 2** When you have selected other than F3 (Full Size), adjust the control knobs as follows.
  - Control 1: Adjusts the basic clipping level for the key.
  - Control 2: Adjusts the gain.

## Inverting the sense of the key

In the KEY MODE menu, press F7 (Key Invert).

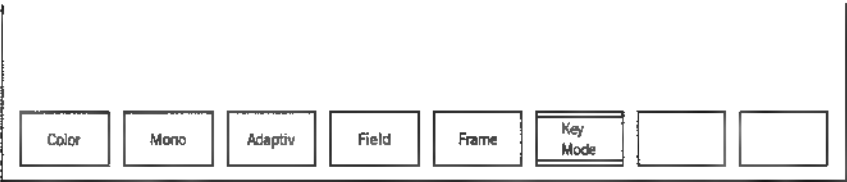
Combiner settings

Connecting two or more DME-5000 units each fitted with an optional BKDM-5020/5021 digital combiner board allows a range of combinations for two images.  
For operational details, see the user's guide accompanying the BKDM-5020/5021.

Video processor settings

The VIDEO PROC menu allows you to select color or monochrome output video, and to specify different types of interpolation.

Menu path: DME → F5 (In/Out) → F6 (Video Proc)



Note that pressing F6 (Key Mode) in this menu skips directly to the KEY MODE menu.

Selecting monochrome or color output

Press F1 (Color) to select color output, or F2 (Mono) to select monochrome output.

Interpolation

Pressing F3 (Adaptiv) causes the interpolation method to switch automatically between frame and field modes, depending on the degree of motion detected. F4 (Field) forces field by field interpolation, and F5 (Frame) forces frame by frame interpolation.

When adaptive interpolation is selected, control 1 adjusts the adaptation sensitivity; the smaller the value, the more sensitive the algorithm is to movement (that is, the closer to field processing).

---

## **Controlling Non-linear Effects—NON LINEAR CONTROL Menu**

The NON LINEAR CONTROL menu allows you to control a variety of curved and 3-D effects. It requires the DME-5000 unit to be fitted with the BKDM-5030 non-linear option. For operational details, see the user's guide accompanying the BKDM-5030.

---

### Monitor Output Control—GRAPHIC/TEXT Menu

The GRAPHIC/TEXT menu allows you to display the coordinate axes or a wire frame outline for the image being manipulated. These functions require the DME-5000 unit to be fitted with an optional BKDM-5060 graphic data display board. For operational details, see the user's guide accompanying the BKDM-5060.



# Chapter 6

## Snapshot Operations

---

Overview of Snapshot Operations	171
Snapshot and Rollback Operations	171
Applying a Snapshot to a New Object	171

# Snapshot Operations

---

This section describes how, on either the switcher or the DME-5000, you can save and recall snapshots of the current image state in memory.

---

## Overview of Snapshot Operations

A snapshot is a copy of the current image state on either the switcher or the DME-5000, which is stored in memory, to be recalled when needed.

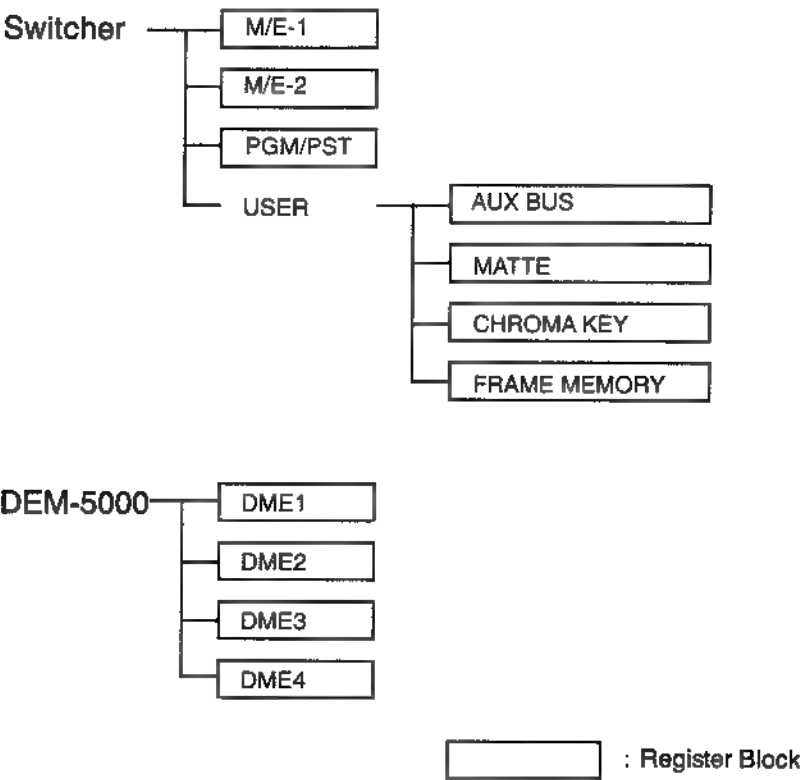
Each snapshot is held in RAM, in a numbered register. A single switcher or DME-5000 unit holds 99 registers, numbered 1 to 99.

### **Note**

On both the switcher and the DME-5000 the power supply to the RAM is maintained by a back-up battery, and the contents of registers are therefore preserved when the unit is powered off. Note, however, that this back-up function lasts only for about one week, after which the data will be lost. To save snapshots for later use, therefore, make a copy on floppy disk. See "File Save" (page 8-14) for details.

# Snapshot Operations

Each register can hold a different snapshot in each of its blocks as shown below. By specifying a single register number, you can recall the snapshots in a number of blocks simultaneously, or in a specified single block.



You can also save snapshots with attributes; when recalled these start a dissolve or an auto transition.

# Saving and Recalling Snapshots

Snapshot operations are carried out from the SNAP SHOT menu. You can also save or recall snapshots on the M/E-1 or M/E-2 blocks by a button operation.

## Note

Whether saved by a button or menu operation, the same register numbers 1 to 99 are used. If, for example, a snapshot has already been saved in a register by a button operation, saving to the same register number from the menu overwrites the existing snapshot.

## Using a Menu Operation

In the TOP MENU section, press the SNAP SHOT button. The SNAP SHOT menu appears.

SNAP SHOT

Sw'er	M / E - 1	M / E - 2	PGM / PST	USER
USER	AUX BUS	MATTE	CHR KEY	FRM MEM
DME	DME 1	DME 2	DME 3	DME 4
Attrib	Sw'er	DME		

Learn

Recall

Last X

↓

M / E - 1

M / E - 2

PGM / PST

USER

### Saving snapshots

- 1** In the SNAP SHOT menu, press F5 to F8 to select the required block.  
Pressing F4 ( ↓ ) changes the soft keys, so that any of the rows of blocks can be accessed. Before using the USER item in the Sw'er row, you must have selected one block in the USER row.  
The selected block appears in reverse video.  
If required, apply attributes to the snapshot.  
For details see "Applying Attributes to a Snapshot" (page 6-7).
- 2** Press F1 (Learn).  
The input window appears, prompting for a register number.
- 3** Enter the register number, using the numeric keypad.  
The snapshots for the selected blocks are all saved, with the same register number.

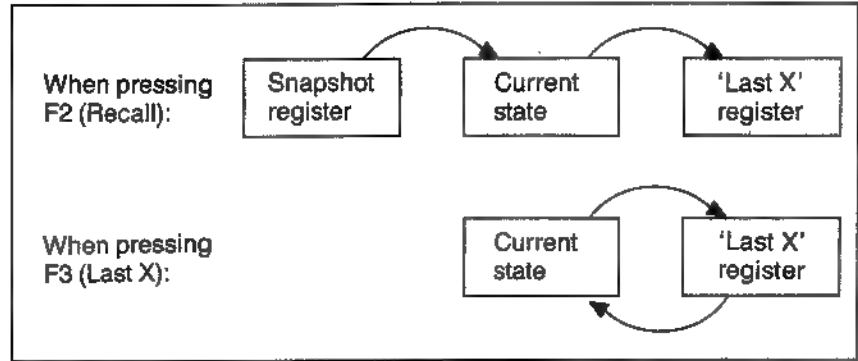
### Recalling snapshots

- 1** In the SNAP SHOT menu, press one of F5 to F8 to select the required blocks.  
Pressing F4 ( ↓ ) changes the F5 to F8 soft keys, so that any of the rows of blocks can be accessed.  
The selected block appears in reverse video.
- 2** Press F2 (Recall).  
The input window appears, prompting for a register number.
- 3** Enter the register number, using the numeric keypad.  
The snapshots for the selected blocks are all recalled, from the same register.

### Restoring the state before a snapshot was recalled

In the SNAP SHOT menu, press F3 (Last X).

When a snapshot is recalled, the previous state is saved in a register called Last X. Pressing the F3 button interchanges the current state with the contents of Last X.



## Snapshot Operations

---

### Using a Button Operation

You can save or recall snapshots on the M/E-1 and M/E-2 blocks of the switcher with a simple button operation on the control panel.

These operations are carried out using the LERN M/E and RECAL M/E buttons on each of the M/E-1 and M/E-2 blocks.

#### Saving a snapshot with a button operation

**1** On the M/E-1 or M/E-2 block, press the LERN M/E in the keying control section.  
The input window appears.

**2** Enter the register number from the numeric keypad.

#### Recalling a snapshot with a button operation

**1** On the M/E-1 or M/E-2 block, press the RECAL M/E in the keying control section.  
The input window appears.

**2** Enter the register number from the numeric keypad.

---

## Applying Attributes to a Snapshot

When saving a snapshot, you can apply any of the following five attributes. These attributes determine the system state when the snapshot is recalled. The attributes which can be applied vary from block to block.

- **Dissolve:** Analog values such as the color information change smoothly from the current state to the snapshot state. To carry out a dissolve, it is necessary to apply this attribute to a snapshot defining the final state of the dissolve. The dissolve path is determined by which elements of the image change.
- **Auto Transition:** When the snapshot is recalled, an auto transition is carried out.
- **X-Point Disable:** The snapshot is recalled without changing the cross-point selection.
- **Lock:** Write-protects the corresponding register.
- **GPI:** When the register is recalled, the predetermined GPI output trigger is started. In this case the GPI button in the ENABLE section must be on.



# Snapshot Operations

## Applying Attributes on the Switcher

Carry out the following procedure after step 1 of “Saving snapshots.”

- 1 In the SNAP SHOT menu, press F4 ( ↓ ), to show the Attrib item in reverse video.

SNAP SHOT

Sw'er	M / E - 1	M / E - 2	PGM / PST	USER
USER	AUX BUS	MATTE	CHR KEY	FRM MEM
DME	DME 1	DME 2	DME 3	DME 4
Attrib	Sw'er	DME		

Learn

Recall

Last X

↓

Sw'er

DME

- 2 Press F5 (Sw'er).  
The SWITCHER ATTRIBUTE menu appears.

Menu path: SNAP SHOT → F4 ( ↓ ) → F5 (Sw'er)

All

M/E ALL

M/E-1

M/E-2

PGM/ PST

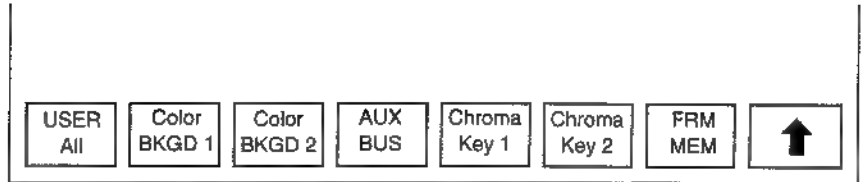
FTB

USER

More

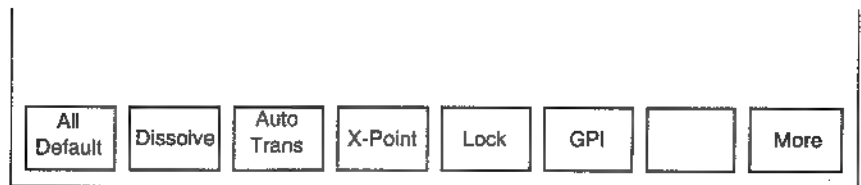
**3** Using F1 to F7, select the block to which the attributes are to be applied.

Pressing F7 (USER) changes the soft key displays as shown in the following figure, so that the other blocks can be selected.



After selecting a block in this menu, press F8 (↓) to return to the previous menu.

**4** Press F8 (More).  
The soft key displays change as follows.



**5** Use F2 to F6 to select the attributes to be applied.  
Pressing F1 (All Default) applies the default settings.

## Chapter 7

# Key Frame Operations

---

Understanding Key Frame Operations	1
Adding Keyframe Channels	1
Deleting Channels	2
Inserting or Deleting Keyframes	2
Editing Keyframes	3
Editing and Deleting Keyframes	3
Setting Time Values and Keyframes	4
Editing Keyframes	4
Applying Position, Rotation, and Scale	4
Using Information Display	4
Keyframe Labels	4

# Key Frame Operations

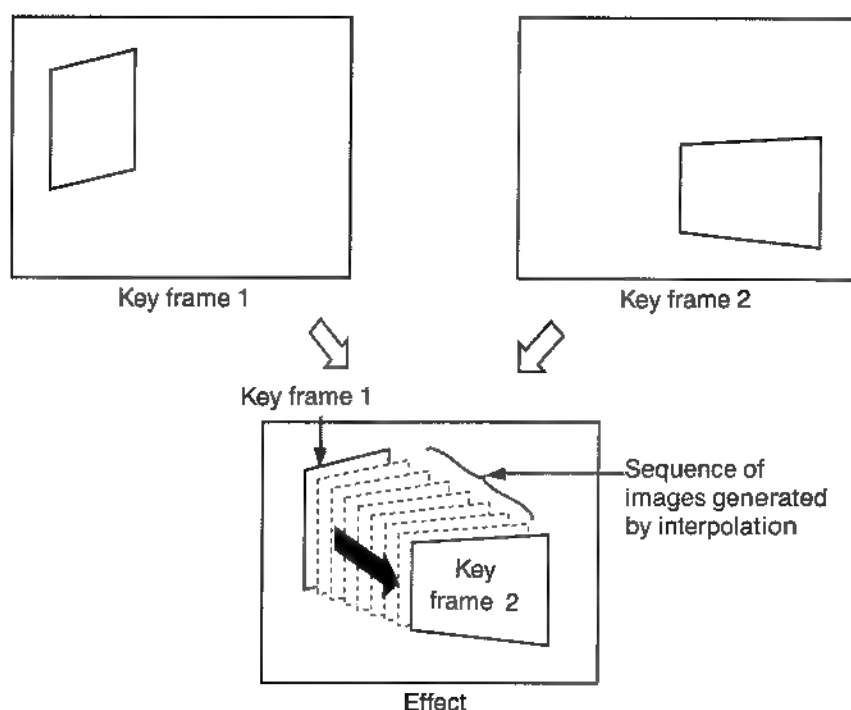
This section describes the operations required, from key frame generation to effect execution.

## Overview of Key Frame Operations

### Key Frames and Effects

A key frame is a set of data which determines the instantaneous state of an image which varies with time.

An effect, in turn, is obtained from a sequence of key frames, interpolated along the time axis so as to appear continuous.



A series of key frames for producing an effect can be held in memory. This allows you to repeat the same effect reliably. A maximum of 99 effects can be held in memory in the switcher or in a single DME-5000 unit, and this can include a total of up to 1000 key frames.

Alternatively, using the floppy disk drive attached to the control panel, you can store any number of effects in effect files.

### Basic Procedure Up To Effect Execution

The following procedure covers the steps from generating a key frame to carrying out the effect. The items shown in parenthesis are the menus and the sections of the control panel used.

- 1** Select the channel for the operation. (CH Select menu)
- 2** Recall the register holding the effect. (EFFECT menu)
- 3** Put the system in edit mode. (EFFECT menu)
- 4** Set the editing position. (Key frame operation section, EDIT section, MOVE KF PTR menu)
- 5** Delegate the menu display to the required channel. (DELEGATION section)
- 6** Generate or edit the key frames. (Joystick control section and EDIT section)
  - Generating and inserting new key frames (INSRT button)
  - Modifying key frames (MOD and MOD ALL KF buttons)
  - Deleting key frames (DEL button)
- 7** Set up the data for interpolating between key frames.  
You can control various settings, such as the time from the beginning to the end of the effect, and the path generated during interpolation.
- 8** Carry out the effect.  
The continuously varying image appears on the monitor screen, with the key frames interpolated according to the settings.

If required, you can also carry out any of the following extra operations:

- Appending attributes to the effect execution.
- Changing the display mode for effect information on the menu display.
- Copying effects from one register to another.

For more details of the above steps except step **5**, see the individual descriptions below. For the step **5** operation, see page 5-5.

---

## Time codes

### Types of time code

There are two types of time code: drop frame, and non-drop frame; key frame operations use the type of time code selected in the SYSTEM SETUP menu. The currently selected type appears among the effect information in the menu display (see page 7-35). For details of setting the time code type, see “Setting the System Clock—SYSTEM SETUP Menu” on page 9-6.

### Entering the time code

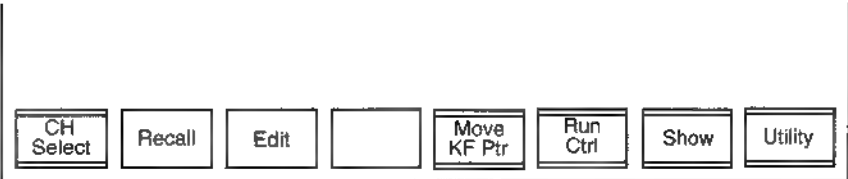
Enter time codes in the format “hh.mm.ss.ff”, that is, hours, minutes, seconds, and frames, each a two-digit number, separated by periods. For example, enter 1 hour, 2 minutes, 4 seconds and 8 frames as “01.02.04.08”. Note that the hours, minutes and seconds can be omitted.

# Key Frame Operations

## Menus Used for Key Frame Operations

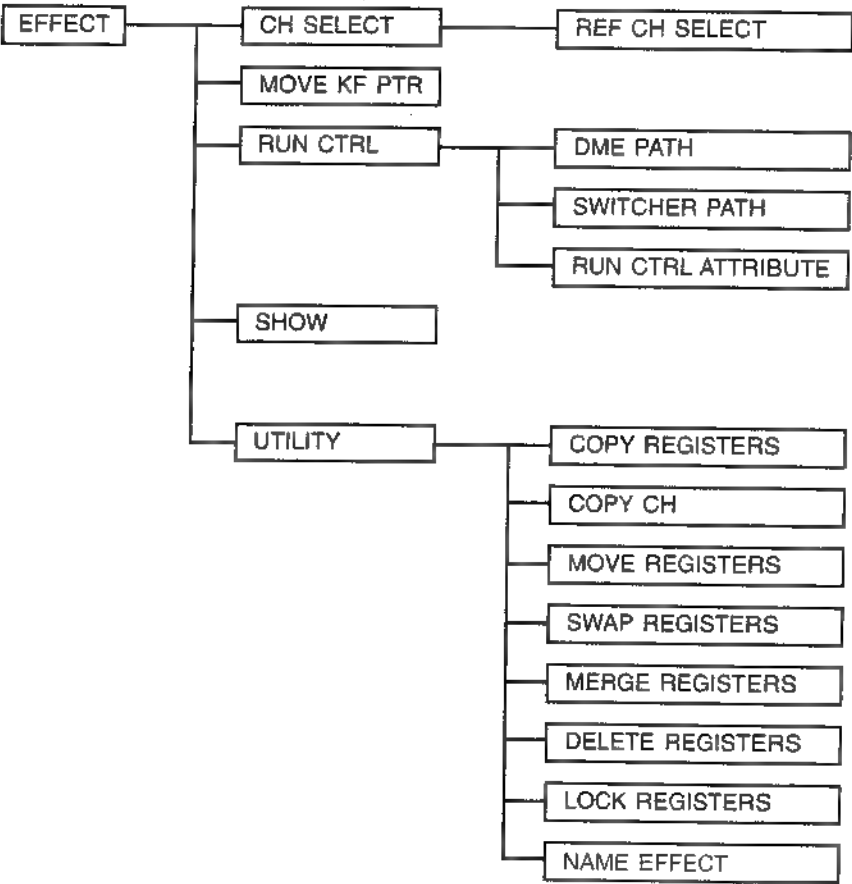
Key frame operations use the tree of menus with the EFFECT menu at its root.

In the TOP MENU section, press the KF button to display the EFFECT menu.



The upper portion of this menu displays information about the effect. For more details, see “Effect Information Display” (page 7-35).

The following illustrates the tree of menus with the EFFECT menu at its root.



The details of these menus are described below.



Selecting Operating Channels

Select the channel for the key frame operation. If selecting more than one channel, select the reference channel from among them.

Operating channels

Key frames can be generated using a maximum of six channels, as listed below.

- The switcher channel
- DME channels 1 to 4
- The DME global channel

Selecting the operating channels

- 1** In the EFFECT menu, press F1 (CH Select).  
The CH Select menu appears.

Menu path: KF → F1 (CH Select)

Swr	DME1	DME2	DME3	DME4	DME Global		Ref CH
-----	------	------	------	------	---------------	--	--------

- 2** Press any number of F1 to F6 to select the corresponding channel or channels.

---

### **Reference channel**

When generating an effect using more than one channel simultaneously, the channel on which the editing is based is termed the reference channel.

Select one channel from among the channels being used to act as the reference channel.

Information about the reference channel is shown on the effect information screen in Detail mode (see page 7-37).

### **Selecting the reference channel**

- 1** In the CH SELECT menu, press F8 (Ref CH).  
The REF CH SELECT menu appears.
- 2** Press one of F1 to F6 to select the reference channel.

### **Multi-channel mode**

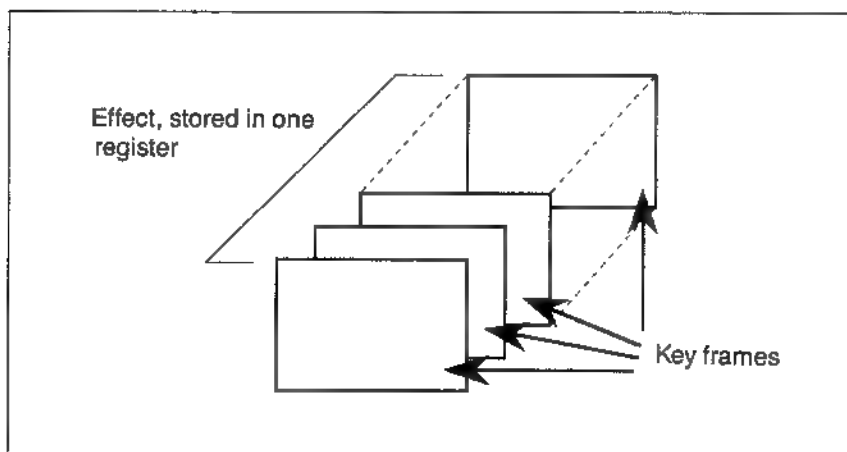
When more than one channel is selected as operating channel, this is termed multi-channel mode.

- During key frame generation and editing in this mode, it is possible that not all of the channels meet the editing conditions. For example, when modifying ■ key frame, it is necessary for the effect on all channels to be stationary on the key frame.
- To meet these conditions, it is sufficient to ensure that the key frame for all channels is at the same position on the time axis. It is therefore preferable, when generating an effect on more than one channel, to start the entire operation in multi-channel mode, and generate the effects simultaneously. If separate effects for different channels are stored with the same register number, it is still possible to recall and execute those effects simultaneously.

### Recalling Registers

The collection of key frames making up an effect is stored in the DME-5000 or the switcher in RAM, and is identified by a register number.

Both the switcher and a DME-5000 unit provide register numbers 1 to 99.



#### **Note**

On both the switcher and the DME-5000 the power supply to the RAM holding the effects is maintained by a back-up battery, and the effects are therefore preserved when the unit is powered off. Note, however, that this back-up function lasts only for about one week, after which the effects will be lost. Always therefore make a copy of needed effects as an effect file on floppy disk. See "File Save" (page 8-14) for details.

---

### Recalling a particular register

- 1** In the EFFECT menu, press F2 (Recall).  
The input window appears.
- 2** Enter the register number from the numeric keypad. This  
accesses that register.

When generating a new effect, access ■ register which is not  
currently holding an effect.

---

### Switching to Edit Mode

The mode for generating key frames and effects is termed edit mode. In edit mode you can use various operations including joystick manipulation to create the desired image, storing the key frames in a register.

Even in this mode, however, while the effect is in progress the joystick and the control panel buttons are disabled, to prevent unintended changes to the effect.

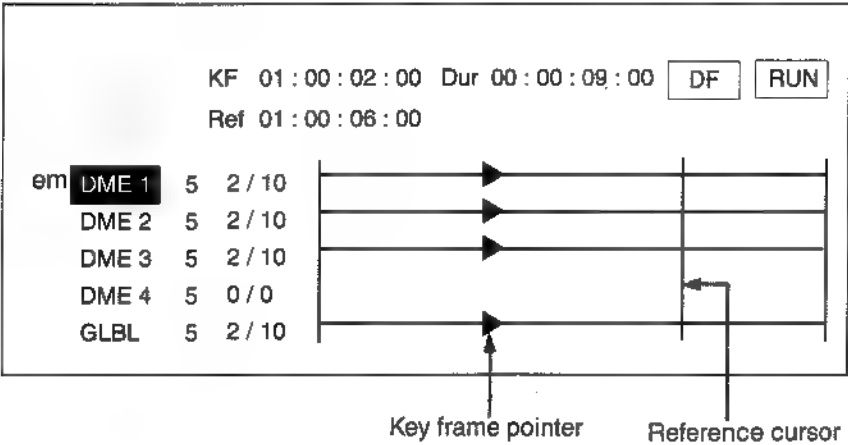
#### **Switching to edit mode**

In the EFFECT menu, press F3 (Edit).

In the Edit section of the control panel, the INSRT and MOD buttons light amber, and the DEL button lights green to indicate edit mode.

# Specifying the Edit Points

In order to insert, change or delete key frames, it is necessary to stop the effect at the corresponding point on the time axis—termed an edit point. You can carry out editing at any point in the effect, whether on a key frame or between two key frames. The point in time at which the effect is currently stopped is shown by the key frame pointer in the effect information shown in the menu display (Summary or Region mode). Subsequent actions to specify the edit point move the key frame pointer with the operation of the effect.



Example key frame pointer display (Summary mode)

To stop the effect at the edit point, use any of the following procedures, using fader lever, button or menu operations.

## Key Frame Operations

---

### Using the Fader Lever

Move the fader lever to advance the effect to the required position, and stop. Using this method, you can stop the effect not only on a key frame but also between two key frames.

### Using a Button Operation

This allows you to stop the effect at the key frame either immediately before or immediately after the current position, or at the beginning or end of the effect.

#### **Specifying the key frame immediately after the current position**

In the EDIT section, press the NEXT KF button.

If the current position is the end of the effect, the key frame pointer does not move. For a loop effect only (see page 7-34), the pointer goes back to the beginning of the effect.

#### **Specifying the key frame immediately before the current position**

In the EDIT section, press the PREV KF button.

If the current position is the beginning of the effect, the key frame pointer does not move. For a loop effect only, the pointer goes to the end of the effect.

#### **Specifying the key frame at the beginning of the effect**

In the key frame control section, press the REWIND button.

#### **Specifying the key frame at the end of the effect**

In the key frame control section, with the REV button on, press the REWIND button.

---

## Using a Menu Operation

This allows you to specify the edit point by entering a time code or key frame number. Use the EFFECT menu for this operation.

In the EFFECT menu, press F5 (Move KF Ptr).  
The MOVE KF PTR menu appears.

Menu path: KF → F5 (Move KF Ptr)

Go to TC	Go to Cursor	Go to KF					
-------------	-----------------	-------------	--	--	--	--	--

### Specifying a time code

- 1** Press F1 (Go to TC).
- 2** Enter the time code from the numeric keypad.  
See “Time codes” (page 7-3) for details.



### Using the reference cursor

You can use the reference cursor shown in the effect information (Summary or Region) on the menu display to specify the edit point. See page 7-11 for details of the reference cursor.

- 1** Use control knob 3 to move the reference cursor to the required position.
- 2** Press F2 (Go to Cursor).

### Using a key frame number

- 1** Press F3 (Go to KF).
- 2** Enter the key frame number in the input window, using the numeric keypad. You can also enter the key frame number as an offset from the current key frame: for example, to move back by three key frames, enter  $-3$ , and press the TRIM button.

---

## Creating and Editing Key Frames

Create the number of key frames required for the effect, in order. You can also use insertion, modification and deletion to edit the sequence of key frames.

### **Working buffer**

The state of the image at which the effect is currently positioned is held in an area of memory referred to as the working buffer.

- When the effect is stopped on a key frame, the working buffer contains a copy of that key frame.
- When the effect is stopped between two key frames, the working buffer contains the interpolated image between the two key frames.

In edit mode, image transformation operations take effect on the contents of the working buffer, and this is transferred to the effect when the MOD or INSRT button in the EDIT section is pressed.

### Creating and inserting key frames

Create individual key frames, and insert them at the edit point. If you recall an empty register, and create the key frames in sequence from the beginning of the effect, it is not necessary to specify the edit point.

- 1** Stop the effect on a key frame, or in between two key frames.
  - When stopped on the first key frame, you can select whether to insert before or after that key frame.
  - When stopped on any other key frame, the key frame is inserted after that key frame.
  - When stopped between two key frames, the key frame is inserted at the current position.
- 2** Apply image transformations or special effect, to generate the key frame to be inserted.
- 3** Press the INSRT button in the EDIT section.
- 4** When the effect is stopped on the first key frame, select whether to insert before or after that key frame. The insertion is then carried out.

Inserting ■ key frame changes the overall length of the effect. For details, see “Change in effect duration caused by key frame insertion” (page 7-22).

---

### Modifying key frames at edit points

- 1** Stop the effect on the key frame to be modified.
- 2** Transform the image, or apply special effects, to modify the key frame.
- 3** Press the MOD button in the EDIT section.  
The modification is carried out.

Modifying a key frame does not affect the overall length of the effect.

### Carrying out the same modification to all key frames after the edit point

- 1** Stop the effect at the first key frame to be modified.
- 2** In the EDIT section, press the MOD ALL KF button, turning it on.
- 3** Carry out the required changes using the numeric keypad, joystick or control knobs.
  - Any joystick or control knob operations will have the same effect on all of the key frames. From the numeric keypad, you can either enter absolute values, using the ENTER button, or offset values, using the TRIM button.
  - Enabling or disabling border effects and so forth similarly applies to all of the key frames.
- 4** Press the MOD button.  
The modification is carried out, and the MOD ALL KF button goes off.

#### Notes

- Steps **2** and **3** in the above sequence can be carried out in reverse order.
- When using the MOD ALL KF button for modification, after pressing the LOC XYZ or LOC SIZE button you cannot use the numeric keypad to input the x- and y-coordinate values for the source coordinates.

### Deleting key frames at edit points

- 1** Stop the effect on the key frame to be deleted, or between the key frame to be deleted and the following key frame.
- 2** Press the DEL button in the EDIT section.  
The deletion occurs.

Deleting a key frame changes the overall length of the effect. For details, see “Change in effect duration caused by key frame deletion” (page 7-23).

### Undo function

During key frame editing operations, when you press the MOD, INSRT or DEL button, the previous state of the working buffer is saved in a buffer called “LAST X.” If you make an error and press one of these buttons inadvertently, you can undo the effect by pressing the LAST X button, and recover the previous state.

The undo function provided by the LAST X button is also effective when setting the key frame duration, effect duration, or effect speed.

---

## Setting Time Values and Path Control

The RUN CONTROL menu allows you to make various settings relating to the time taken by the effect, and the images created by interpolation.

Carry out these settings from the RUN CTRL menu.

In the EFFECT menu, press F6 (Run Ctrl).

The RUN CTRL menu appears.

Menu path: KF → F6 (RUN CTRL)

Speed	Swer Path	DME Path	Delay	KF Durat	Effect Durat	Attrib	
-------	--------------	-------------	-------	-------------	-----------------	--------	--

# Key Frame Operations

## Setting Time Values

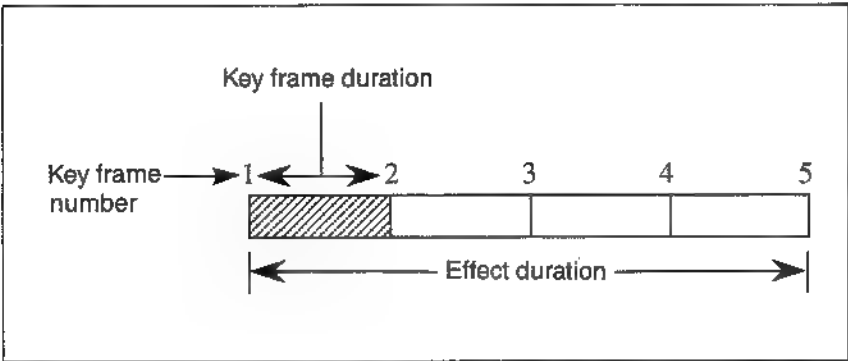
### Setting the key frame duration and effect duration

Set the key frame duration and effect duration to determine the time taken by the effect.

- The key frame duration refers to the interval elapsing between one key frame and the next.
- The effect duration refers to the duration of the entire effect, from the first key frame to the last key frame.

Changing the effect duration automatically scales all of the key frame durations proportionally.

The maximum effect duration which can be specified is 12 hours.



Schematic illustration of key frame duration and effect duration

---

### Setting the key frame duration

The default value for key frame duration is 1 second. Use the following method to change this value for an individual key frame.

- 1** Stop the effect on the key frame whose duration is to be changed.
- 2** In the RUN CTRL menu, press F5 (KF Durat).
- 3** Enter the numeric value in the input window using the numeric keypad.

#### Note

In addition to explicit changes made as above, changing the effect duration automatically scales all of the key frame durations proportionally.

### Setting the effect duration

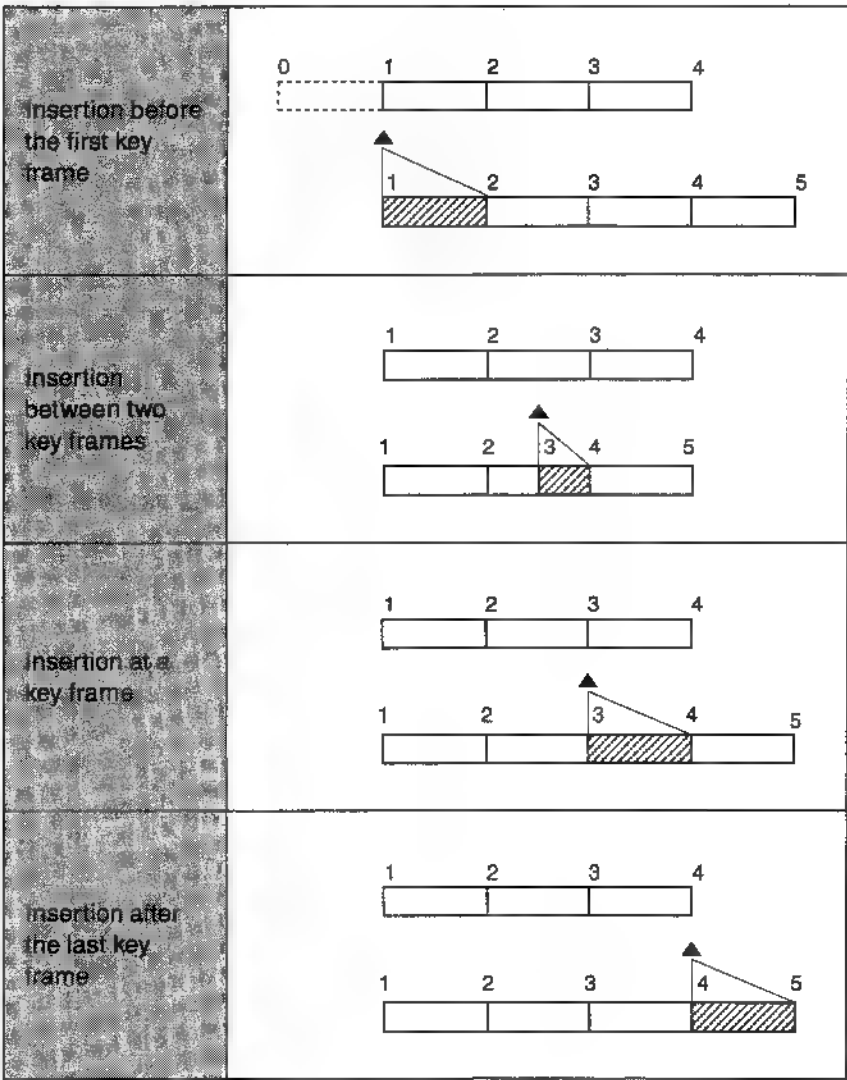
- 1** In the RUN CTRL menu, press F6 (Effect Durat).
- 2** Enter the numeric value in the input window using the numeric keypad.



# Key Frame Operations

## Change in the effect duration caused by key frame insertion

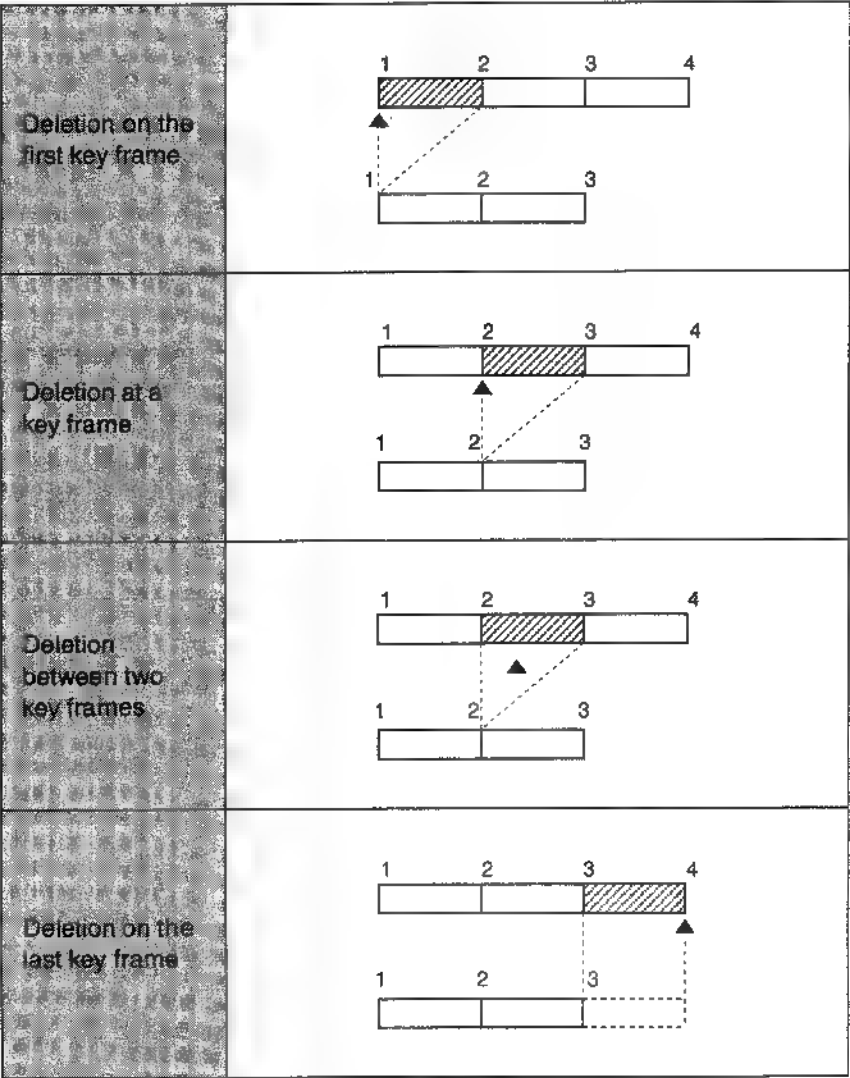
- If the effect is stopped on a key frame when a new key frame is inserted, the effect duration is increased by the key frame duration of the new frame.
- If the effect is stopped between two key frames when a new key frame is inserted, the effect duration is unchanged.



Relationship between insertion position and change of effect duration

**Change in effect duration caused by key frame deletion**

Regardless of the position of the effect, deleting a key frame reduces the effect duration by the corresponding amount.



Relationship between deletion position and change of effect duration

## Key Frame Operations

---

### Setting the delay

You can set the delay, that is, the time elapsing from the operation to carry out an effect until the effect starts, to any value.

#### Setting the delay

- 1** In the RUN CTRL menu, press F4 (Delay).
- 2** Enter the numeric value in the input window using the numeric keypad.

### Variable speed execution of effects

The execution speed of an effect affects only the time taken to execute the effect. It has no effect on the path produced by the effect.

This is in contradistinction to key frame duration and effect duration settings, which also affect the path produced by the effect.

#### Setting the effect speed

- 1** In the RUN CTRL menu, press F1 (Speed).
- 2** Enter the numeric value in the input window using the numeric keypad.

# Setting the Path Type

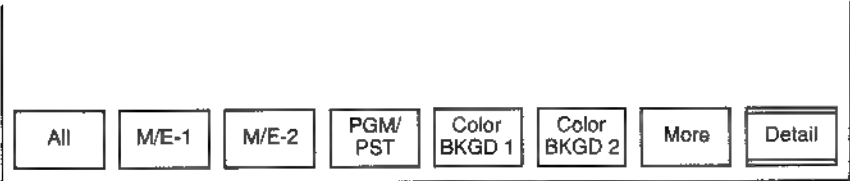
While an effect is in execution, interpolation processing is carried out between key frames. These settings determine in just what way which of the elements defining the image change in the interpolated images.  
The menus used for setting depend on whether you are using a switcher channel or DME channel.

## Switcher path types

Making settings related to interpolation processing for the switcher channel.  
Make these settings from the SWITCH PATH menu.

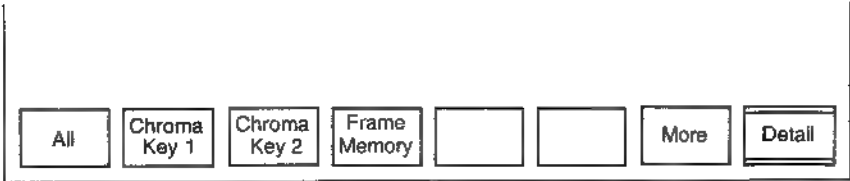
In the RUN CTRL menu, press F2 (Swer Path).  
The SWITCHER PATH menu appears.

Menu path: KF → F6 (Run Ctrl) → F2 (Swer Path)



This menu has a further set of soft keys, illustrated below.  
Pressing F7 (More) toggles between the two sets.

Menu path: KF → F6 (Run Ctrl) →  
F2 (Swer Path) → F7 (More)



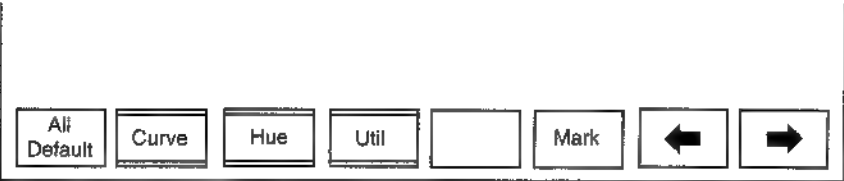
Setting the switcher path type

Select an item to change, and then set the manner in which that item changes (the path type).

- 1** In the SWITCHER PATH menu, press one of F1 (All) to F6 (COLOR BKGD 2), to select the item to be changed. Alternatively, press F7 (More) to get the other set of soft keys. You can then select any one of F1 (All) to F4 (Frame Memory).  
The selected soft key changes to reverse video.

- 2** Press F8 (Detail).  
The following soft keys appear.

Menu path: KF → F6 (Run Ctrl) →  
F2 (Swer Path) → F8 (Detail)



- 3** Press F7 ( ← ) or F8 ( → ) to position the cursor on the detailed item.
- 4** Press F6 (Mark).  
The item on which the cursor is positioned becomes the item to be set, and changes to reverse video.  
Pressing F6 again toggles the item between reverse video and normal video.
- 5** Press one of F1 to F3.
- F1 (All Default): Press to select the default path type.
  - F2 (Curve): Press when setting a path type for Curve.
  - F3 (Hue): Press when setting a path type for Hue.

After pressing F2 or F3, the soft key display changes, and you can select the corresponding path type. For details of these selections, see the next paragraph “Curve path types” and the paragraph “Hue path types” (page 7-28).

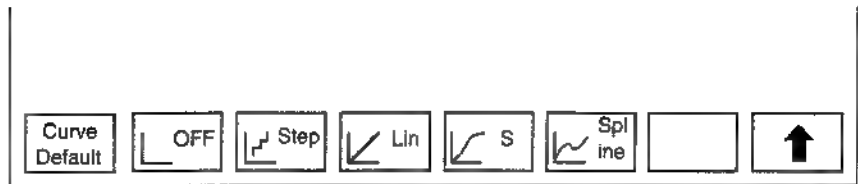
From either of these menus, pressing F8 (↑) returns to the previous menu.

Repeat steps 1 to 5 above, to set all of the items to change, and their path types.

### Curve path types

Pressing F2 (Curve) in step 5 of the procedure in “Setting the switcher path type” (see page 7-26) produces the following soft key display.

Menu path: KF → F6 (Run Ctrl) → F2 (Swer Path) → F8 (Detail) → F2 (Curve)



Each soft key indicates a path type, as follows.

F1 (Curve Default): Make a path following the default values.

F2 (OFF): Make no change as the effect proceeds.

F3 (Step): Change the parameter values stepwise at each key frame. In other words, there is no interpolation in the interval between key frames.

F4 (Linear): Make a linear path between key frames. This maintains a constant speed of movement.

F5 (S-Curve): Make a linear path between key frames, but accelerate and decelerate around each key frame, so that the speed is maximum at the mid-point between two key frames.

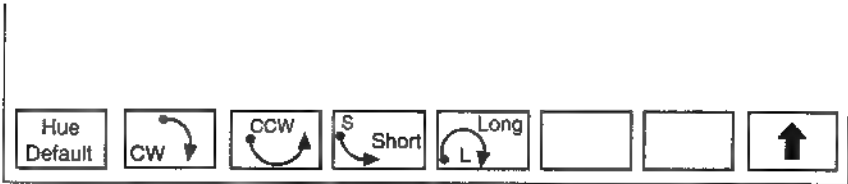
F6 (Spline): Use a spline curve to provide a smooth interpolation. Use the three control knobs to adjust the spline parameters as follows.

- Control 1 adjusts the tension.
- Control 2 adjusts the bias.
- Control 3 adjusts the continuity.

**Hue path types**

Pressing F3 (Hue) in step 5 of the procedure in “Setting the switcher path type” (page 7-26) produces the following soft key display.

Menu path: KF → F6 (Run Ctrl) → F2 (Swer Path) → F8 (Detail) → F3 (Hue)



Each soft key indicates a path type, as follows.

- F1 (Curve Default): Vary following the default values.
- F2 (CW): Rotate the hue clockwise when observed on a vectorscope.
- F3 (CCW): Rotate the hue counterclockwise when observed on a vectorscope.
- F4 (Short): Vary the hue along the shortest path.
- F5 (Long): Vary the hue by the maximum amount. If the hue change from one key frame to the next is zero, rotate clockwise through 360°.

## DME-5000 path types

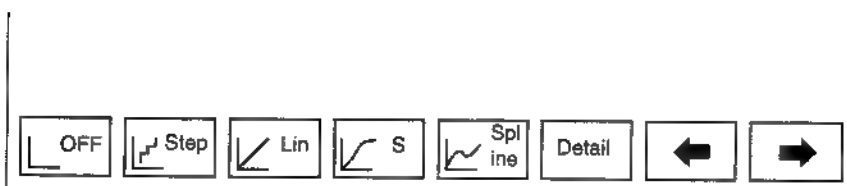
Making settings related to interpolation processing for the DME channel.

Make these settings from the DME PATH menu.

In the RUN CTRL menu, press F3 (DME Path).

The DME PATH menu appears.

Menu path: KF → F6 (Run Ctrl) → F3 (DME Path)



### Setting the DME path type

Select an item to change, and then set the manner in which that item changes (the path type).

- 1 Press F7 ( ← ) or F8 ( → ) to position the cursor on the item to be changed.  
Pressing F6 (Detail) allows you to select a more detailed item to be changed if necessary.



**2** Press one of F1 to F5, to select the path type for the item selected. The soft key displays indicate the five path types listed below. The soft key displays depend on the item selected, because the path types which can be set are different for different items.

F1 (OFF): Make no change as the effect proceeds. You can make any path, except that the joystick cannot be used.

F2 (Step): Change stepwise at each key frame. In other words, there is no interpolation in the interval between key frames.

F3 (Linear): Interpolate linearly between key frames. This maintains a constant speed of movement.

F4 (S-Curve): Interpolate linearly between key frames, but accelerate and decelerate around each key frame, so that the speed is maximum at the mid-point between two key frames.

F5 (Spline): Use a spline curve to provide a smooth interpolation. Use the three control knobs to adjust the spline parameters as follows.

- Control 1 adjusts the tension.
- Control 2 adjusts the bias.
- Control 3 adjusts the continuity.

When the MATTE item is selected, the following four hue path types can be selected. Press F5 (Hue) and select the desired path type.

F1 (CW): Rotate the hue clockwise when observed on a vectorscope.

F2 (CCW): Rotate the hue counterclockwise when observed on a vectorscope.

F3 (Short): Vary the hue along the shortest path.

F4 (Long): Vary the hue by the maximum amount. If the hue change from one key frame to the next is zero, rotate clockwise through 36°.

Repeat steps **1** and **2** above, to set all of the items to change, and their path types.

---

## Executing Effects

You can execute effects which you have created, using the fader lever or RUN button in the menu control block. It is also possible to execute effects from an externally connected device by sending a RUN command.

The progress of the effect is shown by the effect indicator on the left of the fader lever. You can also check it from the key frame pointer shown in the effect information (Summary or Region mode) in the menu display.

When an effect is executed, there are two additional attributes which may apply: the hold input attribute, and the loop attribute. For details see “Applying Execution Attributes to an Effect” (page 7-34).

### Using the fader lever (manual mode)

You can use the fader lever to execute an effect in manual mode.

#### Executing a complete effect

Move the fader lever from one end of its travel to the other.

#### Stopping and restarting an effect

Stop the fader lever at some point in its travel. To restart the effect, start moving the fader lever again. By moving the fader lever in the reverse direction, you can run the effect backwards.

## Key Frame Operations

---

### Using button operations (auto mode)

Using the buttons in the key frame control section, you can run the effect automatically.

#### Executing a complete effect

Press the RUN button, and the effect will be executed in its entirety.

#### Stopping and restarting an effect

Pressing the RUN button again stops the effect in progress. To restart the effect, press the RUN button again.

#### Running an effect backwards

- 1** Press the REV button, turning it on.
- 2** Press the RUN button, or move the fader lever. The effect runs backwards.

#### Running an effect up to the next key frame

You can run an effect from the current position to the next key frame, for detailed observation of the effect between two key frames.

- 1** Press the STOP NEXT KF button, turning it on.
- 2** Press the RUN button, or move the fader lever to run the effect.

#### Returning the effect to the first key frame

Press the REWIND button.

---

### **Combining RUN button and fader lever operation**

You can use a combination of RUN button and fader lever operations to run an effect.

#### **Using the fader lever while in auto mode**

If having started an effect with the RUN button, you move the fader lever while the effect is in progress, the system switches from auto mode to manual mode at the instant that the fader lever position catches up with the progress of the effect, and the RUN button goes off. From that point on, the effect is controlled by the fader lever.

#### **Switching to auto mode while using the fader lever**

If you move the fader lever partly through its travel and then stop, pressing the RUN button restarts the effect. The effect duration setting is scaled in proportion to give the timing for the remainder of the effect. Thus, if set to 100 frames, and the fader lever has moved through an amount corresponding to 25 frames, the remainder of the effect will be executed in auto mode with a duration of 75 frames.

#### **Note**

Completing the effect when the fader lever is still at an intermediate point leaves the fader lever out of sync with the effect. The effect indicator LEDs will either all light or all go off, and in this state the fader lever does not have any effect on the state of the effect. To use the fader lever again, it is first necessary to move it to either end of its travel.

Applying Execution Attributes to an Effect

The following attributes can be applied to an effect, changing the effect of its execution.

- Hold input attribute: Even when the effect is executed, the input video signal and key signal are held at their state before the effect execution.
- Loop: The effect executes repeatedly, in an endless loop. These settings are made from the RUN CTRL ATTRIBUTE menu.

In the RUN CTRL menu, press F7 (Attrib).  
The RUN CTRL ATTRIBUTE menu appears.

Menu path: KF → F6 (Run Ctrl) → F7 (Attrib)



**Applying the hold input attribute**  
Press F1 (Hold Input), turning it on.

**Making a looping effect**  
Press F2 (Loop), turning it on.

---

## Effect Information Display

The EFFECT menu display includes information on the effect currently recalled. You can select the display format.

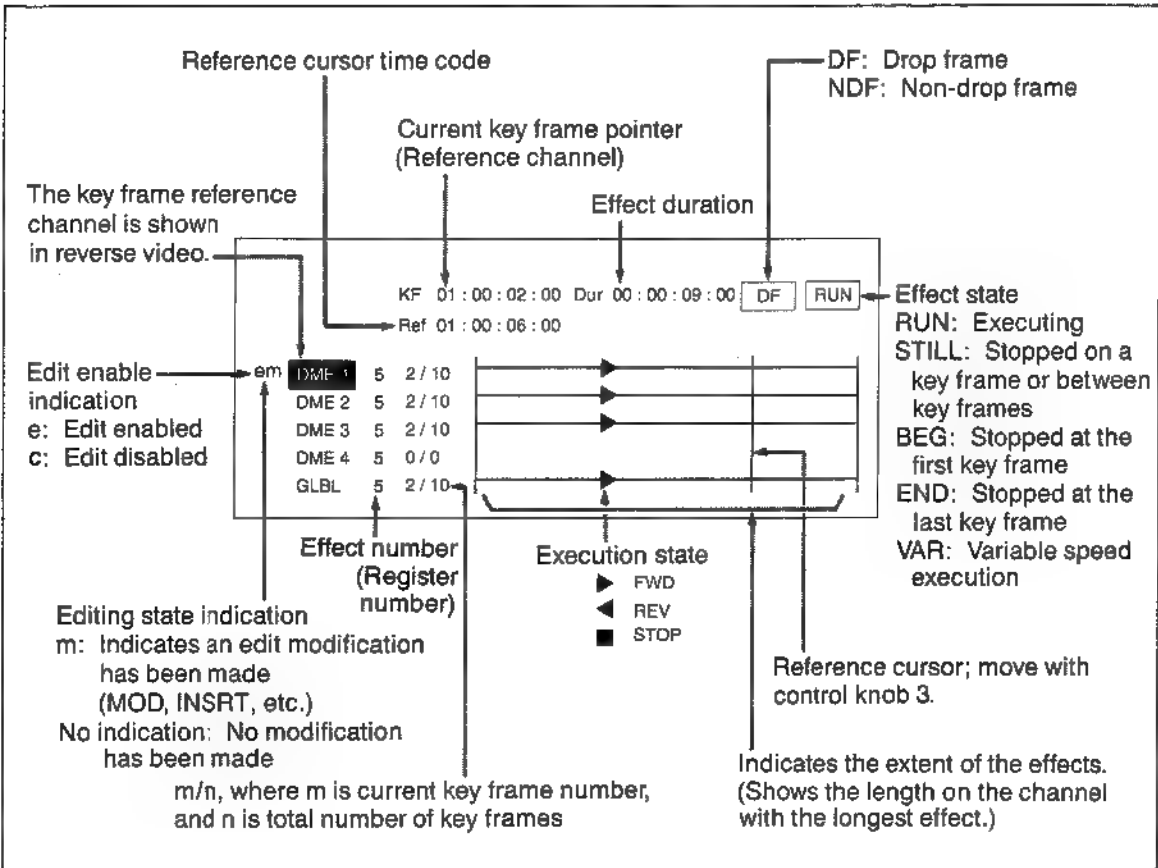
### Display Modes

There are three display modes for the effect information; select the one required.

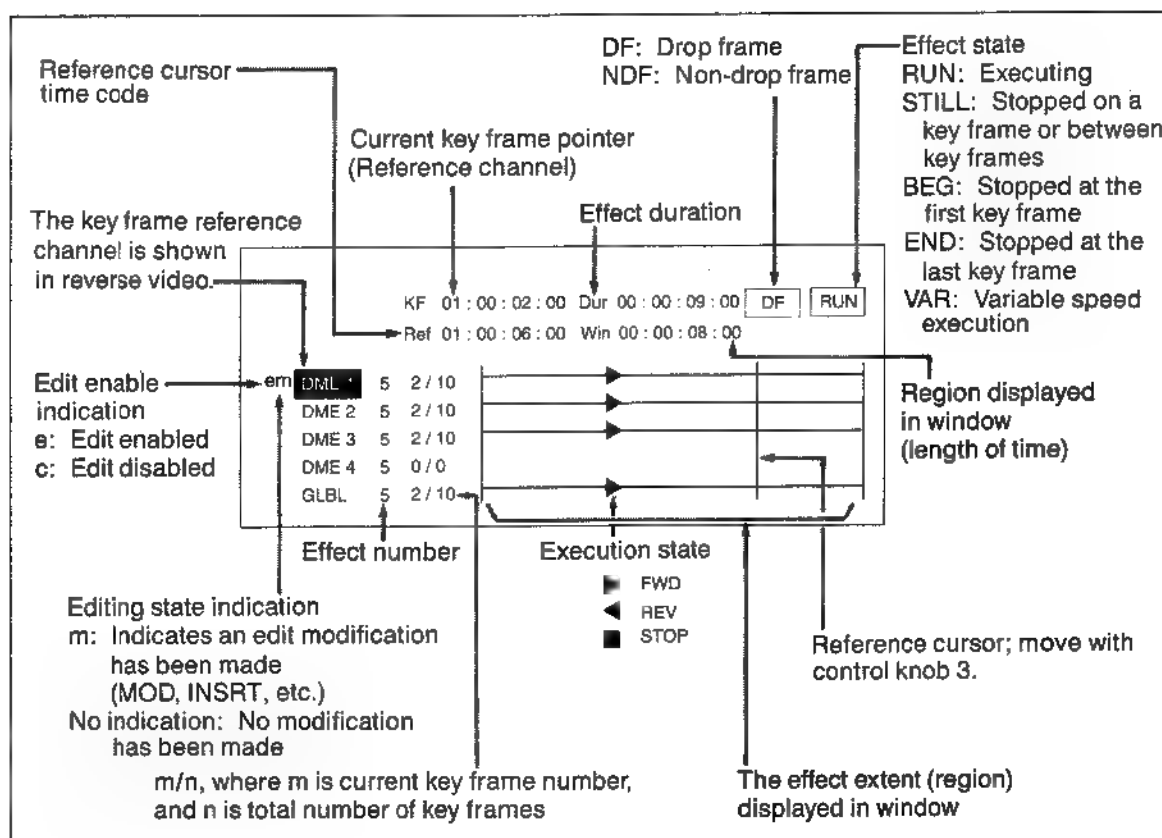
- **Summary:** A graphical representation of the overall state of the effect recalled on the current channel.
- **Region:** A graphical representation of the a part of the effect recalled on the current channel, showing the status around a time point specified by the reference cursor. For effects of long duration, this mode is useful for investigating details of a portion of the effect.
- **Detail:** Detailed information including the time codes of each key frame for the effect on a particular channel.

The following figures illustrate these three display modes.

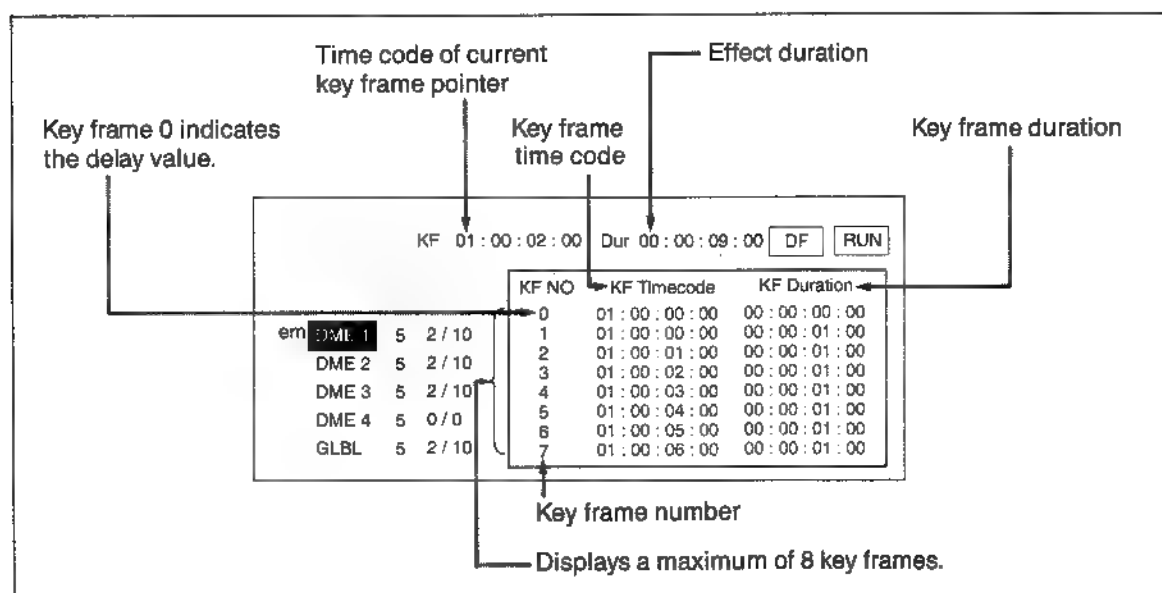
# Key Frame Operations



Effect information display in Summary mode



Effect information display in Region mode



Effect information display in Detail mode



# Key Frame Operations

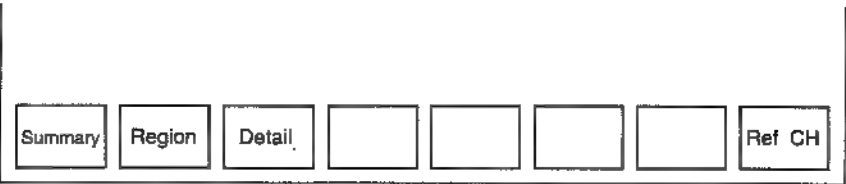
---

## Selecting the Display Mode

Selecting the display mode for effect information.  
This operation is carried out from the SHOW menu.

In the EFFECT menu, press F7 (Show).  
The SHOW menu appears.

Menu path: KF → F7 (Show)



### Selecting Summary mode

Press F1 (Sum).

### Selecting Region mode

- 1** Press F2 (Region).
- 2** Adjust the control knobs as follows.
  - Control 1 adjusts the effect region to be displayed in the window.
  - Control 3 adjusts the position of the reference cursor.

### Selecting Detail mode

- 1** Press F3 (Detail).
- 2** Press F8 (Ref CH), and select the channel to be displayed.

---

## Key Frame Utilities

The key frame utilities allow you to perform housekeeping operations on effects in registers such as copying or moving them. There are a total of eight utility functions; note that the function marked with an asterisk can only be carried out within one switcher or DME-5000 unit.

- Copy from one register to another\*.
- Copy from one channel to another.
- Move the contents of a register\*.
- Interchange two registers\*.
- Add to the contents of a register\*.
- Delete the contents of a register.
- Enable or inhibit writing to a register.
- Name a register.

### Notes

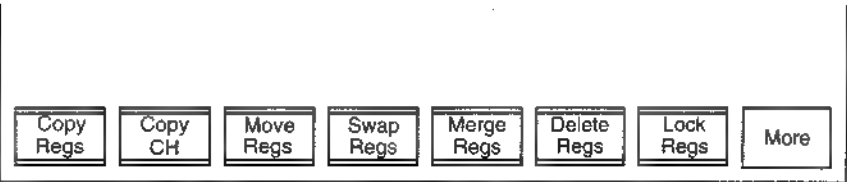
- Moving the contents of a register to ■ new register leaves the original register empty.
- If the destination register for a move or copy already contains effect data, that data is overwritten.

# Key Frame Operations

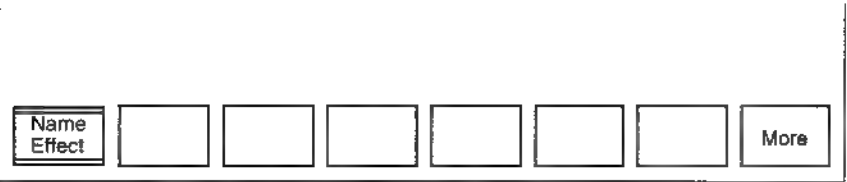
These functions are carried out from the UTILITY menu.

In the EFFECT menu, press F8 (Utility).  
The UTILITY menu appears.

Menu path: KF → F8 (Utility)



This menu has a further set of soft keys, illustrated below.  
Pressing F8 (More) toggles between the two sets.



The UTILITY menu also displays a list of registers where are stored the effects on the reference channel.  
The details of each of these utility operations are described below.

## Copying from One Register to Another

Within one switcher or DME-5000 unit, you can copy an effect from one register to another. You can also apply the copy operation to a block of consecutive registers in a single operation.

These operations are carried out from the COPY REGISTERS menu.

(The following describes an example copy operation, copying the contents of registers 10 to 20 to registers 30 to 40.)

- 1** In the UTILITY menu, press F1 (Copy Regs).  
The COPY REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F1 (Copy Regs)

Source :		Dest :					
Exec	Source	Dest					

- 2** Press F2 (Source).  
The input window appears, with a prompt:

Block Start:

- 3** Enter the number of the first register to be copied, using the numeric keypad.  
The input window appears again, with a prompt:

Block End:

- 4** To copy a block of more than one register, enter the number of the last register to be copied, using the numeric keypad. If copying only one register, no input is necessary.  
The selected block of registers is displayed as follows:

Source: 10-20

- 5** Press F3 (Dest).  
The input window appears, with a prompt:

Block Start:

- 6** Enter the number of the destination register, using the numeric keypad. If copying a block of registers, enter the number of the first register of the destination block.  
The block of registers selected for the destination is displayed as follows:

Dest: 30-40

- 7** Press F1 (Exec), to begin the copy.

## Copying from One Channel to Another

You can copy the entire contents of the register on one DME-5000 unit to another unit.

These operations are carried out from the COPY CH menu.

(The following describes an example operation, copying the registers from channel 1 to channel 2.)

- 1** In the UTILITY menu, press F2 (Copy CH).  
The COPY CH menu appears.

Menu path: KF → F8 (Utility) → F2 (Copy CH)

Source :		Dest :					
Exec	Source CH	Dest CH					

- 2** Press F2 (Source CH).

- 3** Enter the number of the channel to be copied, using the numeric keypad.  
The channel to be copied is displayed as follows:

Source: 1
-----------

- 4** Press F3 (Dest CH).

- 5** Enter the number of the destination channel, using the numeric keypad.  
The destination channel is displayed as follows:

Dest: 2
---------

- 6** Press F1 (Exec), to begin the copy.

Moving the Contents of a Register

Within one switcher or DME-5000 unit, you can move effects from one register to another. You can also apply the move operation to a block of consecutive registers in a single operation. This function can alternatively be considered as renumbering registers. These operations are carried out from the MOVE REGISTERS menu.

In the UTILITY menu, press F3 (Move Regs).  
The MOVE REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F3 (Move Regs)

Source :		Dest :					
Exec	Source	Dest					

For steps 2 and following, use the same procedure as in “Copying from one register to another” (page 7-41).

**Note**

After moving the contents of registers, the source registers are left empty. Any existing effects held in the destination registers are overwritten.

## Interchanging Two Registers

Within one switcher or DME-5000 unit, you can interchange two registers. You can also apply the operation to two blocks of consecutive registers in a single operation. These operations are carried out from the SWAP REGISTERS menu.

In the UTILITY menu, press F4 (Swap Regs).  
The SWAP REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F4 (Swap Regs)

Source :		Dest :					
Exec	Source	Dest					

For steps 2 and following, use the same procedure as in “Copying from one register to another” (page 7-41).

**Note**

When specifying blocks of registers to interchange, ensure that the same register is not included in both sets.



Adding to the Contents of a Register

You can add the effect held in another register to the end of the effect in the currently recalled register. These operations are carried out from the MERGE REGISTERS menu. (The following describes an example operation, adding the effect in register 10 to the end of the current effect.)

- 1 In the UTILITY menu, press F5 (Merge Regs). The MERGE REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F5 (Merge Regs)

Source :							
Exec	Source						

- 2 Press F2 (Source).
- 3 Enter the number of the register to be added, using the numeric keypad. The input register number is displayed as follows:

Source: 10
------------

- 4 Press F1 (Exec). The effect from the specified source register will be added to the end of the effect in the currently recalled register.

# Deleting the Contents of a Register

You can delete the contents of a specified register.  
Within one switcher or DME-5000 unit, you can also apply the operation to delete all registers or a block of consecutive registers in a single operation.  
These operations are carried out from the DELETE REGISTERS menu.

In the UTILITY menu, press F6 (Delete Regs).  
The DELETE REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F6 (Delete Regs)

Source :					
Exec	Delete Block	Delete All			

## Deleting the contents of all registers

- 1 Press F3 (Delete All).  
The display shows the following message, indicating that all registers are about to be deleted:

Source: All
-------------

- 2 Press F1 (Exec).  
This deletes the contents of all registers.

**Deleting the contents of a specified register or block of registers**  
(The following describes an example operation, deleting the block of registers 10 to 20.)

- 1** In the DELETE REGISTERS menu, press F2 (Delete Block).  
The input window appears, with a prompt:

Block Start:

- 2** Enter the number of the first register to be deleted, using the numeric keypad.  
The input window appears again, with ■ prompt:

Block End:

- 3** To delete a block of more than one register, enter the number of the last register to be deleted, using the numeric keypad. If deleting only one register, no input is necessary.  
The selected block of registers is displayed as follows:

Source: 10-20

- 4** Press F1 (Exec).  
This deletes the contents of the selected register or registers.

## Enabling or Inhibiting Writing to a Register

Within one switcher or DME-5000 unit, you can apply this operation to all registers or a block of consecutive registers in a single operation.

These operations are carried out from the LOCK REGISTERS menu.

In the UTILITY menu, press F7 (Lock Regs).  
The LOCK REGISTERS menu appears.

Menu path: KF → F8 (Utility) → F7 (Lock Regs)

Source :							
Exec	Lock Block	Lock All	Lock Unlock				

### Enabling or inhibiting writing to all registers

- 1 Press F3 (Lock All).  
The display shows the following message, indicating that the operation applies to all registers:

Source: All
-------------

- 2 Press F4 (Lock Unlock), setting it the Lock to inhibit writing, or Unlock to enable writing.
- 3 Press F1 (Exec).  
This applies the enable or inhibit writing setting to all registers.

**Enabling or inhibiting writing to a specified register or block of registers**

(The following describes an example operation, applied to the block of registers 10 to 20.)

- 1** Press F2 (Lock Block).  
The input window appears, with a prompt:

Block Start:

- 2** Enter the number of the first register for which the setting is to be made, using the numeric keypad.  
The input window appears again, with a prompt:

Block End:

- 3** To apply the setting to a block of more than one register, enter the number of the last register to which it is to be applied, using the numeric keypad. To set one register only, no input is necessary.  
The selected block of registers is displayed as follows:

Source: 10-20

- 4** Press F4 (Lock Unlock), setting it the Lock to inhibit writing, or Unlock to enable writing.
- 5** Press F1 (Exec).  
This enables or inhibits writing to the selected register or registers.

# Naming a Register

You can give a name of up to 8 characters to the currently recalled register.  
This operation is carried out from the NAME EFFECT menu.

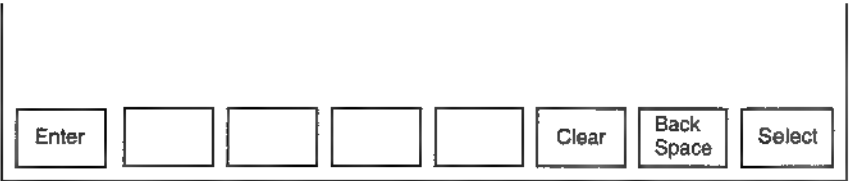
- 1** In the UTILITY menu, press F8 (More).  
The soft key "Name Effect" appears.

Menu path: KF → F8 (Utility) → F8 (More)



- 2** Press F1 (Name Effect).  
The NAME EFFECT menu appears.

Menu path: KF → F8 (Utility) → F1 (Name Effect)



- 3** Adjust control knob 3 to select the first character.
- 4** Press F8 (Select) to confirm the character.  
You can also use F6 (Clear) and F7 (Back Space) to edit the name as required.  
Repeat steps 3 and 4 to creating a name with a maximum of eight characters.
- 5** Press F1 (Enter).  
This conforms the currently displayed name.

## Chapter 8

# Floppy Disk Operations

---

Overview of Floppy Disk Operations

Total questions: 10

Time: 10 min

10

10

10

# Floppy Disk Operations

---

This section describes the procedures for saving and retrieving data, using the floppy disk drive attached to the control panel.

---

## Overview of Floppy Disk Operations

You can use the floppy disk drive attached to the control panel for saving data in registers on the switcher or DME-5000 unit on a floppy disk.

The drive uses 3.5-inch 2HD disks.

The following sets of data, generated on either the switcher or the DME-5000, can be saved on floppy disk:

- Snapshots
- Key frame effects
- Setup data

The following seven disk operations are provided by the system. (Note that in the remainder of this section, the term “processor” is used to refer to either the switcher or the DME-5000 unit, and the term “disk” to refer to a floppy disk.)

**File load:** Transferring data from the floppy disk to the processor. The contents of the file with a specified number are transferred to the register of the same number.

**File save:** Transferring data from the processor to the floppy disk. The contents of the register with a specified number are transferred to a file identified by the same number.

**File deletion:** Deleting files from the disk.

**Disk formatting\***

**Disk labeling:** Giving the disk an identifying name.

**File naming:** Giving an identifying name to a file.

**Write-protect/write-enable setting for a file**

---

\* A new disk must be formatted before use.



## Floppy Disk Operations

---

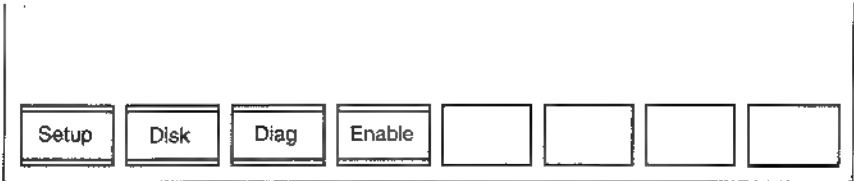
The above operations can be carried out for each of the switcher, DME 1 to DME 4, and DME global channels. However, each channel can only data saved from the same channel.

The following description assumes a single floppy disk drive, but you can also use two floppy disk drives, if the optional BKDS-8050 second floppy disk drive unit is fitted.

# Menus Used for Disk Operations

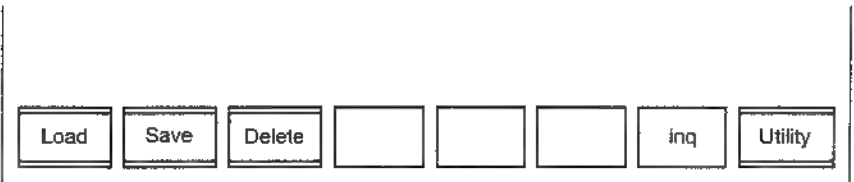
All disk operations are carried out from the DISK menu.

- 1 In the TOP MENU section, press the SET/DIAG button.  
The SETUP & DIAG menu appears.



- 2 Press F2 (Disk).  
The DISK menu appears.

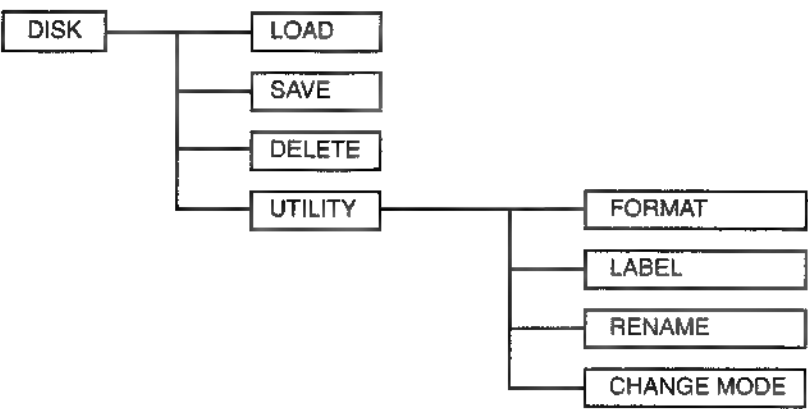
Menu path: SET/DIAG → F2 (Disk)



# Floppy Disk Operations

---

All menus used for disk operations are in the tree of menus with the DISK menu at its root, as shown in the following figure.



The following sections describe these menus in detail.

---

## **Inquiry Mode**

- Pressing F7 (Inq) in the DISK menu, and turning it on, enables the Inquiry mode. This means that after pressing the button for a file load or file save operation, a message appears to request confirmation before the operation itself is carried out.

For example, after pressing the button to save a file, the following message appears on the menu screen:

**Do you want to save?**

Soft keys labeled “Yes” and “No” also appear, and pressing the Yes button carries out the operation.

- When F7 (Inq) is off, no confirmation message appears, and the load or save operation begins immediately the button is pressed.

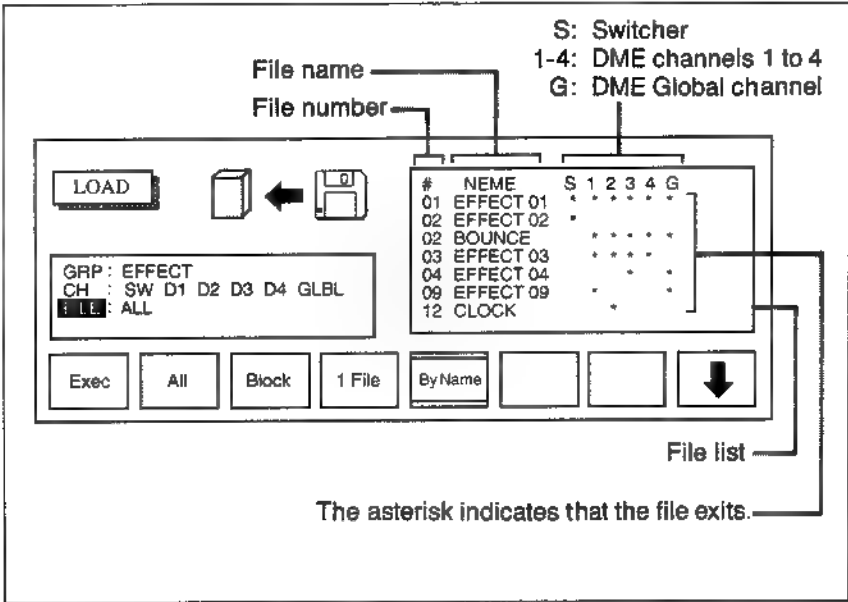
# Floppy Disk Operations

## Specifying Files

You can specify files for a load or save operation either singly or in blocks. There are two ways of doing this:

- By specifying the file number.
- By selecting from the list of files on the disk.

The list of files on the current disk appears on the menu screen as shown below.



Example display of file list

You cannot use the file list selection method when saving a file.

The following procedures describe the steps for specifying a file which are common to LOAD, SAVE, DELETE, RENAME and CHANGE MODE menu operations. The remainder of each of the procedures is described in the relevant section.

---

## Specifying the file number

### Specifying a block of files

- 1** Press F3 (Block).  
The input window appears, with a prompt:

Block Start:

- 2** Enter the number of the first file in the block, using the numeric keypad.  
The input window appears again, with a prompt:

Block End:

- 3** Enter the number of the last file in the block, using the numeric keypad.

### Specifying a single file

- 1** Press F4 (1 File).  
The input window appears, with a prompt:

1 File:

- 2** Enter the number of the file, using the numeric keypad.

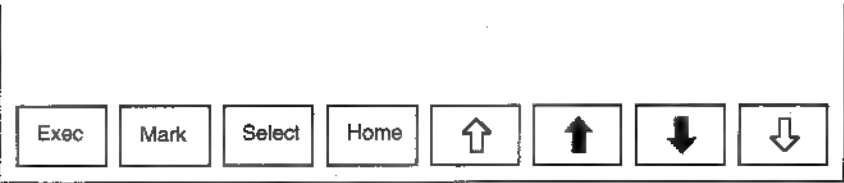
# Floppy Disk Operations

---







## Selecting from the list of files

**1** Press F3 (Block) or F4 (1 File).

**2** Press F5 (By Name).  
The soft keys appear as follows.



The meanings of the soft key legends are as follows.

- F1 (Exec):** Carries out the load operation.
- F2 (Mark):** Marks the beginning of a block to select.
- F3 (Select):** Marks the end of a block to select.
- F4 (Home):** When this button is held down, F5 (  ) moves the cursor to the first page, and F8 (  ) moves the cursor to the last page.
- F5 (  ):** Moves the cursor to the previous page of files.
- F6 (  ):** Moves the cursor up.
- F7 (  ):** Moves the cursor down.
- F8 (  ):** Moves the cursor to the next page of files.

---

### **Specifying a block of files**

- 1** Use F4 to F8 to position the cursor on the file number at the beginning of the block.
- 2** Press F2 (Mark).  
The marked file appears in reverse video.
- 3** Use F7 or F8 to position the cursor on the file number at the end of the block.
- 4** Press F3 (Select).

### **Specifying a single file**

- 1** Use F4 to F8 to position the cursor on the file number to be selected.
- 2** Press F2 (Mark).  
The marked file appears in reverse video.
- 3** Press F3 (Select).  
The selected file number appears in the FILE row.



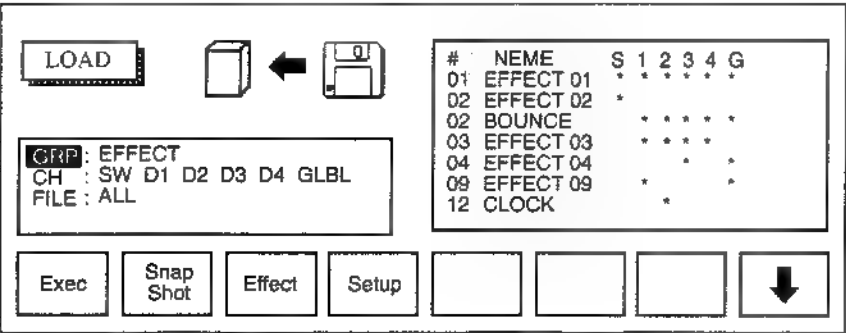
File Operations

File Load

This operation loads a file or files from the disk to the processor.

- 1 In the DISK menu, press F1 (Load).  
The LOAD menu appears.

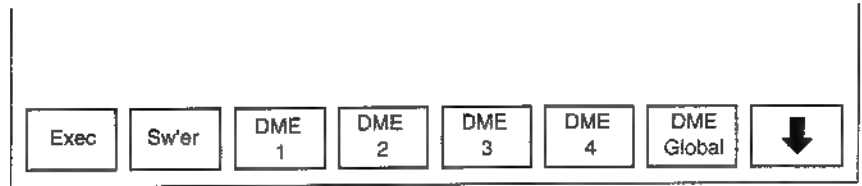
Menu path: SET/DIAG → F2 (Disk) → F1 (Load)



The same soft keys as above also appear in the SAVE, DELETE, RENAME, and CHANGE MODE menus.

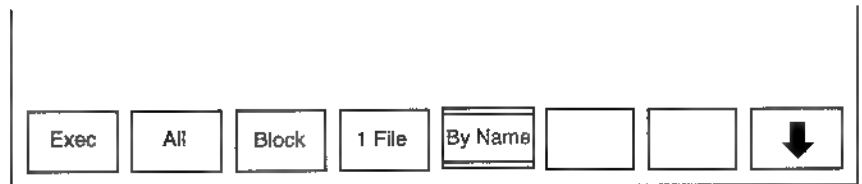
- 2 With the GRP item in the menu display shown in reverse video, press one of F2 to F4 to select the type of data to be loaded.
  - F2 (Snap Shot): Loads a snapshot.
  - F3 (Effect): Loads a key frame effect.
  - F4 (Setup): Loads setup data.The display of the selected soft key changes to reverse video, and the selected type of data is displayed in reverse video in the GRP row.

- 3** Press F8 ( ↓ ), to move the cursor to the CH item.  
The soft key display changes as follows.



- 4** Press one of F2 to F7 to select the channel or channels to be loaded.  
You can select any number of channels.  
The selected soft key and channel name are shown in reverse video.

- 5** Press F8 ( ↓ ), to move the cursor to the FILE item.  
The soft key display changes as follows.



- 6** Press one of F2 to F4 to specify the file or files to be loaded.

- To load all files, press F2 (All).
- To load a contiguous block of files, press F3 (Block).
- To load a single file, press F4 (1 File).

To select the file or files to be loaded from a listing of the files, press F5 (By Name).

After pressing any of F3 to F5, various input window prompts or soft key displays appear. For further details of the appropriate method of specification, see "Specifying Files" (page 8-6).

**7** Press F1 (Exec).

**When the Inquiry mode is disabled:**  
The operation is carried out immediately.

**When the Inquiry mode is enabled:**  
The following confirmation message appears on the menu screen:

Do you want to load?

The soft key display changes as follows.

Break	Yes	No	All				
-------	-----	----	-----	--	--	--	--

- To carry out the load, press F2 (Yes) or F4 (All). When loading more than one file, pressing F2 (Yes) produces the confirmation message at the end of each file. Pressing F4 (All) loads all files without pausing.
- To skip the current file without loading it, press F3 (No). To cancel the entire load operation, press F1 (Break).

During the load operation, the soft keys appear as follows.

Break							
-------	--	--	--	--	--	--	--

**Forcibly abandoning the load operation**

- 1** Press F1 (Break).  
The following prompt appears in the menu display.

User break abort?
-------------------

The soft key display changes as follows.

	Abort		Ignore				
--	-------	--	--------	--	--	--	--

- 2** To abort the operation press F2 (Abort).  
To continue, press F4 (Ignore).

### File Save

This operation saves data from a processor register or registers to the disk.

- 1** In the DISK menu, press F2 (Save).  
The SAVE menu appears. The soft key display is the same as in the LOAD menu (page 8-10).
- 2** For the remainder of the procedure, follow the steps in “File Load” (page 8-10). The process for aborting the operation is also the same as in a load operation.

---

## **File Deletion**

This operation deletes the specified file or files from the disk.

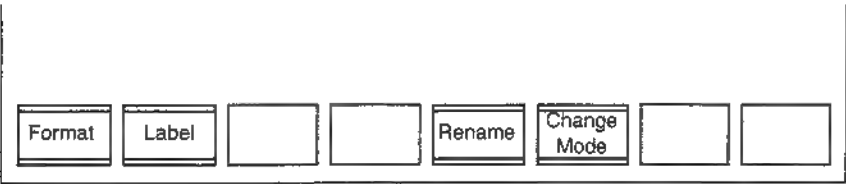
- 1** In the DISK menu, press F3 (Delete).  
The SAVE menu appears. The soft key display is the same as in the LOAD menu (page 8-10).
- 2** For the remainder of the procedure, follow the steps in “File Load” (page 8-10).

Disk Utilities

The UTILITY menu provides various utility functions, such as disk formatting and file naming.

In the DISK menu, press F8 (Utility).  
The UTILITY menu appears.

Menu path: SET/DIAG → F2 (Disk) → F8 (Utility)



- Press F1 to format a floppy disk.
- Press F2 to label the disk.
- Press F5 to name a file.
- Press F6 to enable or inhibit writing to a file.

# Disk Formatting

This operation formats a floppy disk. A new disk must be formatted before it can be used.

- 1 In the UTILITY menu, press F1 (Format).  
The FORMAT menu appears.

Menu path: SET/DIAG → F2 (Disk) →  
F8 (Utility) → F1 (Format)

Initial	Cancel						
---------	--------	--	--	--	--	--	--

At this time the menu shows the following mssage:

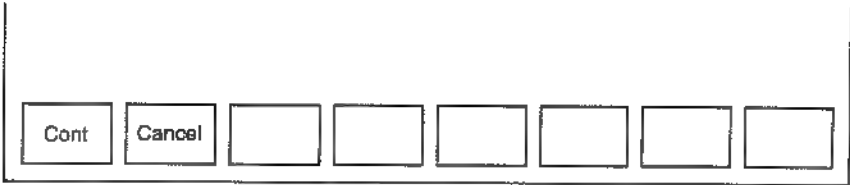
Do you want to initialize it?



- 2** • To format the disk, press F1 (Initial).  
The formatting begins, and the progress is shown on the menu display.
- To cancel the formatting, press F2 (Cancel) to return to the UTILITY menu.
- When the formatting is completed, the following message appears in the menu display.

Process completed  
Do you want to continue this process?

The soft key display changes as follows.



- 3** • To format another disk, insert the new disk and press F1 (Cont).
- If there are no further disks to format, press F2 (Cancel).

# Disk Labeling

This operation attaches an identifying name of up to eight alphanumeric characters to the disk. It is carried out using the LABEL menu.

- 1 In the UTILITY menu, press F2 (Label).  
The LABEL menu appears.

Menu path: SET/DIAG → F2 (Disk) →  
F8 (Utility) → F2 (Label)

Change	Cancel						
--------	--------	--	--	--	--	--	--

- 2 Press F1 (Change).  
The soft key display changes as follows.  
Pressing F2 (Cancel) returns to the UTILITY menu.

Enter					Clear	Back Space	Select
-------	--	--	--	--	-------	---------------	--------

- 3 Turn control knob 3 to select the required character.
- 4 Press F8 (Select) to confirm the character.  
You can also use F6 (Clear) and F7 (Back Space) to edit the name as required.  
Repeat steps 3 and 4 to create a label name with a maximum of 8 characters.
- 5 Press F1 (Enter).  
This confirms the currently displayed label name, and returns to the LABEL menu.

File Naming

This operation attaches an identifying name of up to eight alphanumeric characters to a file.

This operation is carried out from the RENAME menu.

- 1** In the UTILITY menu, press F5 (Rename).  
The RENAME menu appears. The soft key display is the same as in the LOAD menu (page 8-10).
- 2** Follow steps 2 to 4 of the procedure in “File Load” (page 8-10) to select the data type and channel(s) of the file to be named.
- 3** Press F8 ( ↓ ), to move the cursor to the FILE item.  
The soft key display changes as follows.

	File #	By Name	New Name				
--	--------	---------	----------	--	--	--	--

- 4** Use either of the following methods to select the file to which the name is to be applied.
  - Press F2 (File #) and enter the file number.
  - Press F3 (By Name) and select from the list of files.
- 5** Press F4 (New Name).  
The soft key display changes as follows.

Enter					Clear	Back Space	Select
-------	--	--	--	--	-------	------------	--------

---

**6** Turn control knob 3 to select the required character.

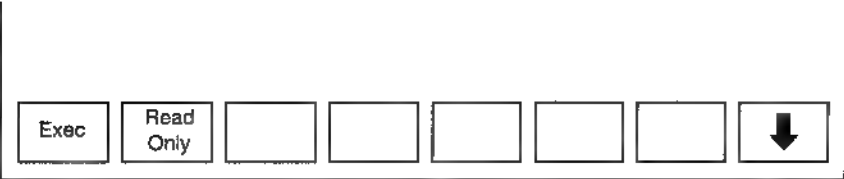
**7** Press F8 (Select) to confirm the character.  
You can also use F6 (Clear) and F7 (Back Space) to edit the name as required.  
Repeat steps **6** and **7** to create a file name with a maximum of 8 characters.

**8** Press F1 (Enter).  
This confirms the currently displayed file name, and returns to the RENAME menu.

Write-Protect/Write-Enable Setting

This setting allows you to prevent a file from being overwritten, or to re-enable writing, as required. This operation is carried out from the CHANGE MODE menu.

- 1** In the UTILITY menu, press F6 (Change Mode).  
The CHANGE MODE menu appears. The soft key display is the same as in the LOAD menu (page 8-10).
- 2** Follow steps **2** to **6** of the procedure in “File Load” (page 8-10) to select the file of which the write-enable status is to be changed.
- 3** Press F8 ( ↓ ), to move the cursor to the MODE item.  
The soft key display changes as follows.



- 4** Press F2 (Read Only).  
Pressing F2 toggles between “Read Only” and no display. “Read Only” means that the file is write-protected, and no display means that the file is write-enabled.
- 5** Press F1 (Exec).  
This applies the setting to the specified file.

## Chapter 9

### Setup Operations

---

Perform a Soft 100 Setup .....	9-2
Accessing Menu and Display Section — dTUP Menu .....	9-3
Setting the General Lock — SYSTEM SETUP Menu .....	9-4
Making Software Settings — SW SETUP Menu .....	9-5
Setting Up the [AN]0-000—034] 100% Scale .....	9-6

# Setup Operations

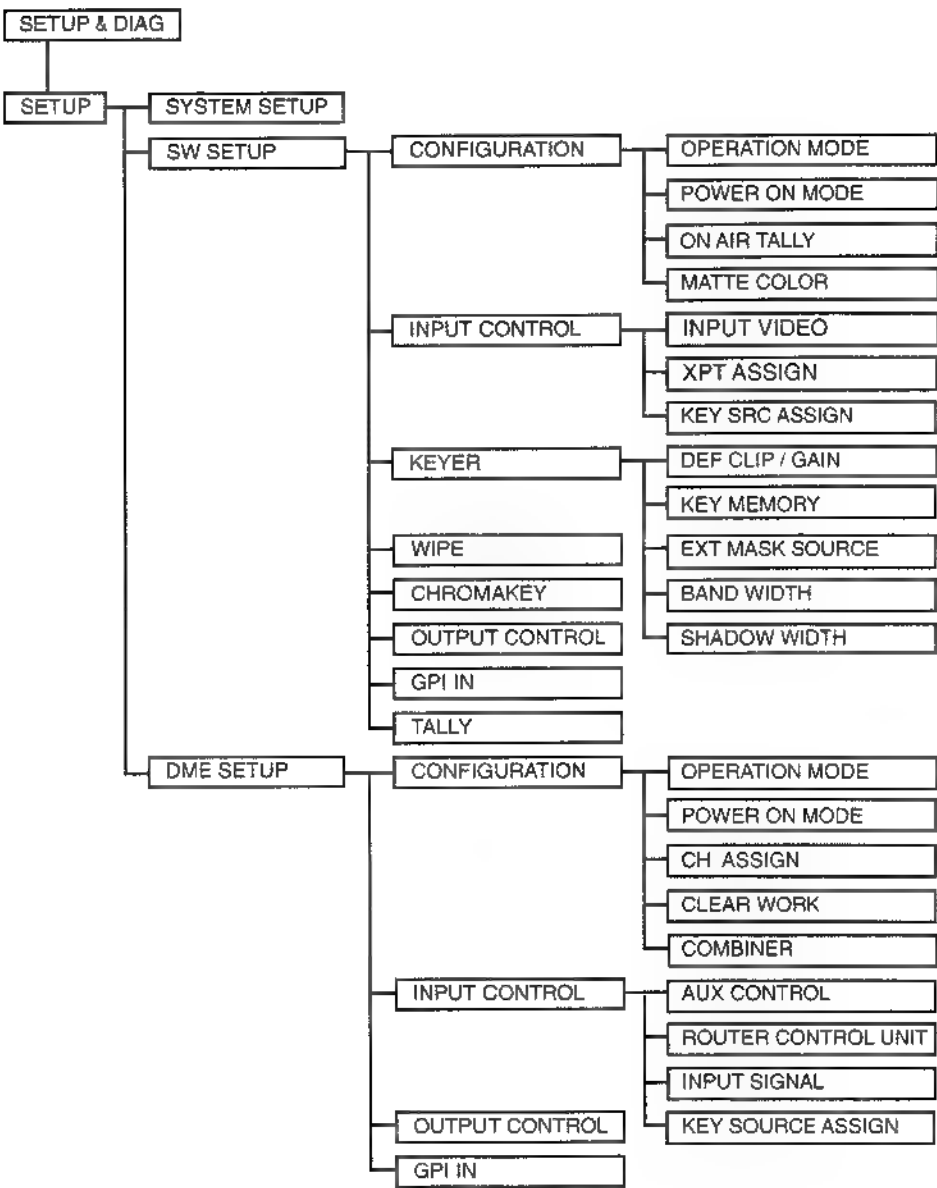
---

In a system comprising a switcher, a DME-5000 and a control panel, there are many settings to be made in order to exploit the system fully. Generally settings will be made when the system is installed, but you can also use these facilities to change settings to meet different requirements, or after adding options which require particular settings.

This chapter describes these setup operations, which are all menu-driven.

Menus Used for Setup

All setup operations are carried out within the menu tree with the SETUP menu at its root. This is shown in the following figure.





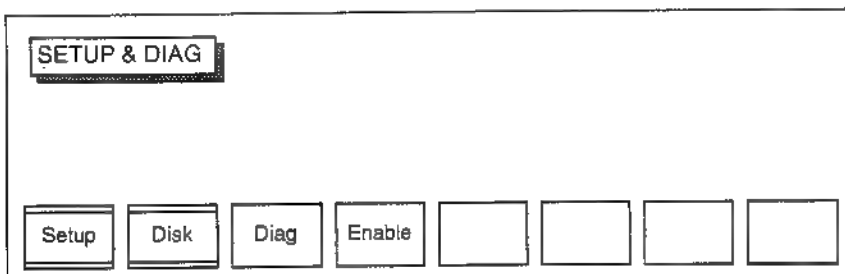
---

## Accessing Menus and Saving Settings—SETUP Menu

All setup operations are carried out from menus accessed from the SETUP menu. In the SETUP menu, you can also save the user settings (in EEPROM).

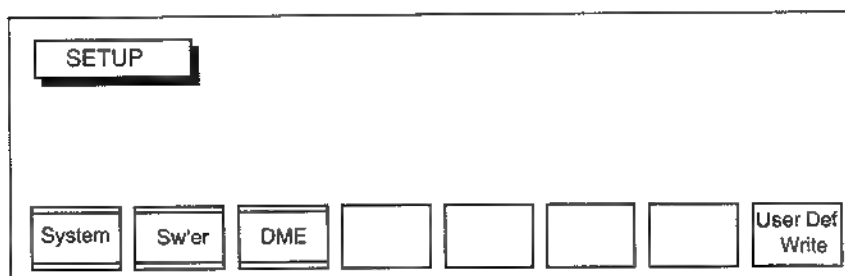
### Displaying the SETUP Menu

- 1 In the TOP MENU section in the menu control block on the control panel, press the SET/DIAG button.



- 2 Press F1 (Setup).  
The SETUP menu appears.

Menu path: SET/DIAG → F1 (Setup)



- Press one of F1 to F3 to access the next layer of menus.
- Press F1 (System) to adjust the system real time clock.
  - Press F2 (Sw'er) to carry out switcher settings.
  - Press F3 (DME) to carry out DME-5000 settings.

## Setup Operations

---

### Saving and Recalling User Settings

Long-term saving of settings is handled differently for the DME-5000 and switcher settings.

#### Switcher settings

Changing switcher settings affects the copy of the settings held in RAM. Unless, therefore, the power on mode (see page 9-12) is set to Resume mode, powering off the system loses the changes. Use one of the following methods to ensure that changes to the settings are preserved.

##### Using the SETUP menu

In the SETUP menu, press F8 (User Def Write) to save the current settings in EEPROM (non-volatile memory).

In this case, however, the system must be powered off with the power on mode set to User Defined.

See page 9-12 for details of how to set the User Defined mode.

##### Saving settings to floppy disk

Use the DISK menu to save the settings, using the floppy disk drive attached to the control panel. This is recommended as the best way to make a permanent copy of settings. See Chapter 8 “Floppy Disk Operations” for more details.

##### Setting the power on mode to Resume

The power supply to the RAM holding the current settings is maintained by a back-up battery. If, therefore, the power on mode is set to Resume, the settings will be preserved when the unit is powered off.

Note, however, that this back-up function lasts only for about one week. It should not therefore be relied on as the sole method for saving settings. See page 9-12 for details of how to set the Resume mode.

---

### **DME-5000 settings**

The DME-5000 differs from the switcher, in that each time the settings are changed, the new values are also written to EEPROM. Whether the DME-5000 power on mode (see page 9-44) is set to Resume or User Defined, therefore, the previous setting are always recalled when the unit is powered on.

Setting the System Clock—SYSTEM SETUP Menu

This menu allows you to adjust the real time clock built into the control panel, and also to set the type of time code used by the DME-5000 and switcher.

Menu path: SET/DIAG → F1 (Setup) → F1 (System)

SYSTEM  
SETUP

Date : 91 . 09 . 04  
Time : 09 . 30 . 00  
Time Code Type : DF

Date

Time

DF \*

NDF \*

\* If the system is set up for 625-line operation, the F3 and F4 functions are not present.

Setting the date

- 1 Press F1 (Date) to display the input window.
- 2 Enter the date in yy.mm.dd format, using the numeric keypad (e.g. 91.07.04), and confirm by pressing ENTER.

---

## Setting the time

- 1** Press F2 (Time) to display the input window.
- 2** Enter the time in 24-hour format, using the numeric keypad (e.g. 14.07.00), and confirm by pressing ENTER.  
Note that leading zeros may be omitted, and the seconds may also be omitted entirely if zero. For example “14.5” means 14.05.00.

## Time code types

For 525-line systems, two types of SMPTE time code are available: drop frame, and non-drop frame.

**Non-drop frame:** This method allocates a time code to each frame, as though there were 30 frames per second. Since there are actually 29.97 frames per second this results in a cumulative discrepancy of approximately 3 seconds per hour between the time code value and the actual elapsed time.

**Drop frame:** This method adjusts the time code values allocated so that they keep exactly in step with real time.

For 625-line systems, there are exactly 50 frames per second, so the drop frame type of time code is not required.

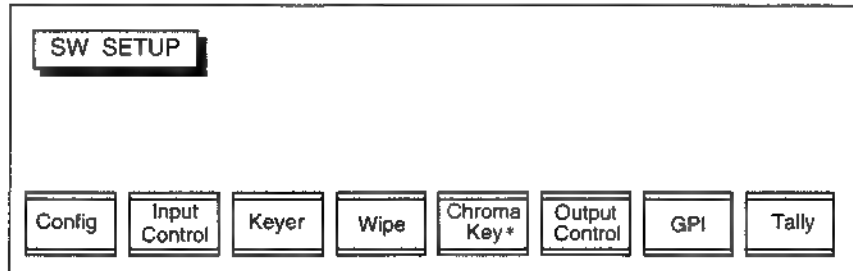
## Selecting the type of time code

- Press F3 (DF) to select drop frame time codes.
- Press F4 (NDF) to select non-drop frame time codes.

### Making Switcher Settings—SW SETUP Menu

The SW SETUP menu gives access to all of the submenus for making switcher settings.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er)



\* For D1 systems (DVC-8000C), the F5 function is not present.

Press one of F1 to F8 to access the next layer of menus.

- Press F1 (Config).
- Press F2 (Input Control) to carry out phase adjustment on the input signal, and make cross-point delegations.
- Press F3 (Keyer) to carry out settings for the keyer.
- Press F4 (Wipe) to carry out wipe settings.
- Press F5 (Chroma Key) to carry out chroma key settings.
- Press F6 (Output Control) to adjust the phase, or white clip and dark clip settings for the output signal.
- Press F7 (GPI) to carry out settings for the GPI input.
- Press F8 (Tally) to carry out settings for the tally display.

## Making Operating Mode Settings—CONFIGURATION Menu

The CONFIGURATION menu selects the basic operating mode of the switcher.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F1 (Config)

CONFIGURATION							
OP Mode	PWR ON Mode	ON Air Tally	Matte				

Press one of F1 to F8 to access the next layer of menus.

- Press F1 (OP Mode) to set the basic operating mode.
- Press F2 (PWR ON Mode) to set the power on mode.
- Press F3 (ON Air Tally) to set the on air tally displayed when re-inputting a video signal to the switcher from external equipment such as the DME-5000.
- Press F4 (Matte) to set the limit values for the color matte signal.

# Setup Operations

## Setting the operating mode—OPERATION MODE menu

The OPERATION MODE menu allows four items to be set, to determine the basic operating mode.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F1 (Config) → F1 (OP Mode)

OPERATION MODE

BUS Toggle : ON

DSK Auto Drop : OFF

Preset BKGD MIX : BLACK

DSK Trans : MIX

BUS Toggle

DSK AT Drop

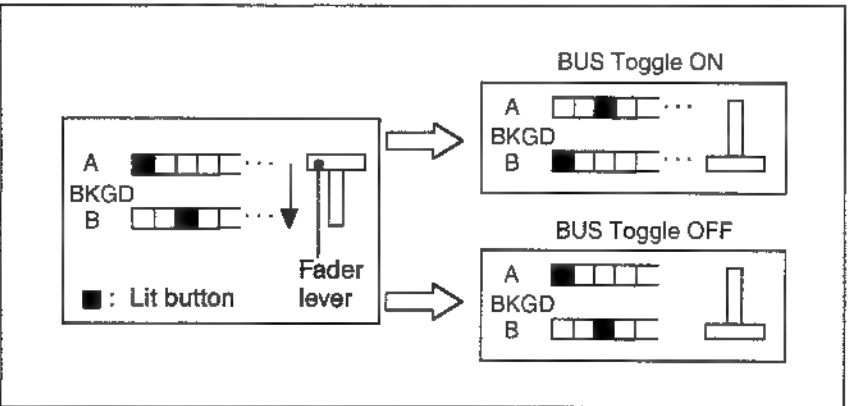
Preset BKGD

DSK Trans

### Items displayed

**BUS Toggle:** This determines whether or not the BKGD A and BKGD B buses are interchanged during a background transition.

Pressing F1 (BUS Toggle) toggles the setting on or off.



Change in state of controls with BUS Toggle ON/OFF



---

**DSK Auto Drop:** This determines whether or not the DSK (downstream keyer) automatic drop function is active. When this item is on, as the BKGD bus of the PGM/PST block is switched, the key inserted is automatically removed.

Press F2 (DSK AT Drop) to toggle the setting on or off.

**Preset BKGD MIX:** This indicates the background color to be used for the first transition after executing a preset background mix (black, color background 1, or color background 2).

Press F3 (Preset BKGD) to cycle through these settings in the above order.

**DSK Trans:** This indicates the effect of the KEY ON button in the PGM/PST block, that is, a cut or a mix.

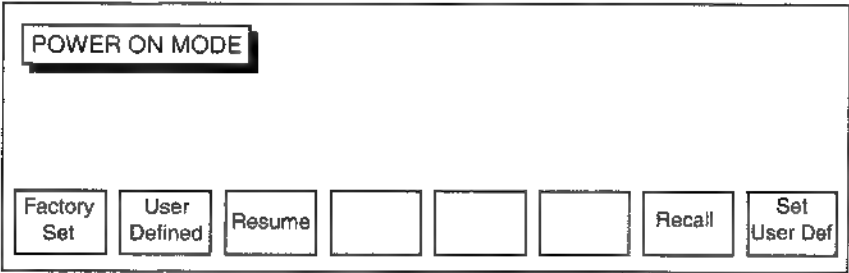
- When this item is set to CUT, the key cut function is allocated.
- When this item is set to MIX, the key mix function is allocated. In this case the transition duration is indicated by the FRAMES display in the PGM/PST block.

Press F4 (DSK Trans) to toggle between cut and mix.

Setting the power on mode—POWER ON MODE menu

There are three power on modes, affecting the treatment of user settings and the state of buttons on the control panel when the system is powered on. The menu also allows you to save or restore the current settings.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) →  
F1 (Config) → F2 (PWR ON Mode)



Setting the power on mode

Press one of F1 to F3 to set the corresponding mode.

- F1 (Factory Set): The system powers on with the factory settings.
- F2 (User Defined): The system powers on with the user settings which have been saved as described below.
- F3 (Resume): The switcher powers on in resume mode, that is with the same settings as before the switcher was last powered off.

Note that the selected soft key is indicated in reverse video.

Note

The switcher settings are held in RAM. The power supply to the RAM is maintained by a back-up battery, to preserve the settings when the unit is powered off. Note, however, that this back-up function lasts only for about one week. After that, the settings are lost, and the switcher will power on in factory set mode.

---

### **Saving user settings**

This function writes the current settings of the control panel to EEPROM, so that they are used if the system is powered on in User Defined mode.

**1** Ensure that all of the switcher settings are those required to be saved.

**2** Press F8 (Set User Def) to save the current settings.

### **Recalling user settings**

Press F7 (Recall) to set the control panel to the saved settings.

# Setup Operations

## Setting the on air tally—ON AIR TALLY menu

The ON AIR TALLY menu provides settings to allow the correct tally display when re-inputting an AUX bus output video signal from external equipment such as the DME-5000 to the switcher.

Use these settings so that when the DME video is on air the cross-point tally selected on the DME is on.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F1 (Config) → F3 (ON Air Tally)

ON AIR TALLY		INPUT No.	
AUX1		3	
AUX2		4	
AUX3		21	
AUX4		22	

AUX1

AUX2

AUX3

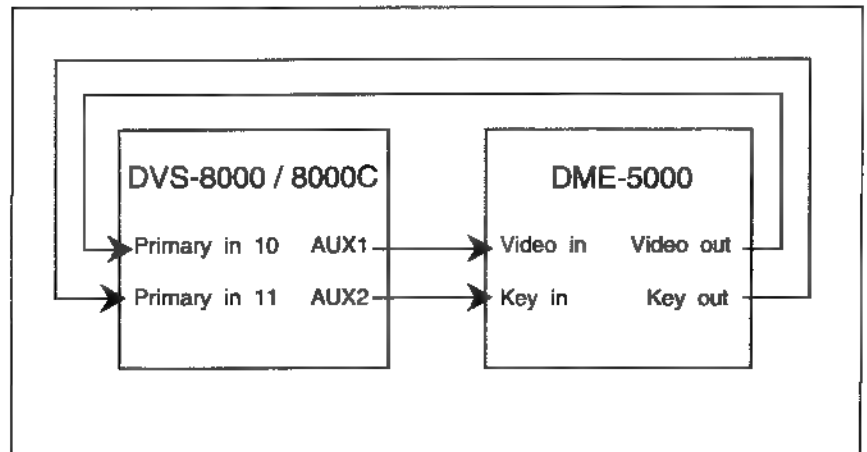
AUX4

EDIT PVW

OFF

### Setting the tally display when on air

In the example system in the diagram shown below, the switcher AUX1 and AUX2 outputs are input to the VIDEO and KEY inputs of the DME-5000, and are re-input to the switcher as primary inputs 10 and 11 respectively. In this case, use the following procedure to allocate cross-points 10 and 11 to the AUX1 and AUX2 buses.



- 1** Select the AUX bus to be set—in this example AUX 1.
- 2** In the input window, enter the number of the cross-point at which the AUX bus signal is re-input, using the numeric keypad—in this example 10.

Make the setting for the other AUX bus in the same way.

#### Note

For an AUX bus with no tally displayed, be sure to press F7 (OFF), so that the tally is indicated as “-”.

Setting the matte signal output levels—MATTE COLOR menu

The MATTE COLOR menu allows you to enable or disable the limiter functions on the signals generated by the color matte generators built into the switcher. Enabling the limiter functions prevents output signals from exceeding broadcast standard levels.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F1 (Config) → F4 (Matte)

MATTE COLOR		Illegal Color Limiter	:	ON			
		Super White	:	ON			
		Super Black	:	ON			
Illegal Color	Super White	Super Black					

Items displayed

- Illegal Color Limiter: When this is on, the output signal levels are not allowed to exceed the 100% color bar levels.
- Super White: When this is off, the output signal levels are not allowed to exceed the 100% luminance level (+100 IRE units for DVS-8000).
- Super Black: When this is off, the output signal levels are not allowed to go below the pedestal level.

Enabling or disabling the limiter functions

Press one of F1 to F3 to toggle the corresponding limiter function. Note that the first item is on when the limiter function applies, whereas the other two items are off when the limiter function applies.

Note

These settings only apply to matte color signals generated by the switcher.

# Making Input Signal Settings—INPUT CONTROL Menu

The INPUT CONTROL menu is used to make input signal settings.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F2 (Input Control)

INPUT CONTROL

Input Video

Xpt Assign

Key Source

- Press F1 (Input Video) to carry out phase adjustments on the primary input signal.
- Press F2 (Xpt Assign) to assign a cross-point button number to the primary input signal.
- Press F3 (Key Source) to set a particular key source signal to be selected automatically for a particular key fill signal.

Phase adjustments to the primary input signal—INPUT VIDEO menu

When using the switcher with video signals from outside sources such as video cameras, VTRs or character generators, it is necessary to bring these signals into phase synchronization with the external reference signal. The INPUT VIDEO menu provides the necessary phase adjustments on the primary input signal.

Note that before carrying out these adjustments you must have assigned a cross-point (see page 9-22).

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F2 (Input Control) → F1 (Input Video)

INPUT VIDEO

No	Source	Typ	Genlock	In Phs	Hue	Phs Adj	CF	SCH	SCH Adj	V Shift
12	VTR 1	A	Auto	+ 1.0 $\mu$ s	- 2.5	+ 2 ck	Nrm	<■>	+ 115	—

Button No

Genlock\*

Hue \*

Phase Adjust

SCH\* Adjust

V Shift

↑

↓

\* On D1 systems (DVS-8000C) the F2, F3 and F5 functions are not present, and are indicated as “—”.

Items displayed

- No: Indicates the cross-point button number assigned to the primary input.
- Source: Indicates the signal name allocated to the primary input.
- Typ: Indicates whether the input signal is analog (A) or digital (D). This is always D for D1 systems (DVS-8000C).
- Genlock: For an analog input, this indicates the mode for genlocking the input to the external reference signal. The Auto mode gives priority to a color burst signal, and the Sync mode is based on the horizontal synchronizing signal. For a digital signal, this setting is not required, and appears as “—”.
- For normal input from a camera or VTR, set to Auto.
  - For a key signal, from a character generator for example, which does not include color burst, set to Sync. If set to Auto, operation may not be correct.



- 
- In Phs:** Indicates the phase difference between the reference signal and the input video. Normally, adjust so that this item shows 0. Carry out this adjustment on the equipment supplying the signal to the switcher.
- Hue:** For an analog input, indicates the hue correction amount. This is adjustable in the range  $\pm 45.0^\circ$  by  $0.1^\circ$  increments. This adjustment is not required for a digital input, or on D1 systems (DVS-8000C), and in those cases appears as “—”.
- Phs Adj:** Indicates the horizontal phase adjustment of the input signal.  
This is adjustable in the range  $-128$  to  $+127$  clock pulses in increments of 1 clock pulse.
- CF:** For a digital input, indicates the color frame phase state of the input signal with respect to the reference signal. If in phase it appears as Norm, and if in inverted phase as Inv. It is normally necessary to adjust the external equipment so that this indication is Norm, but if the V Shift item is set to Enb, it is corrected automatically.
- SCH:** Indicates the phase of the sub-carrier and horizontal synchronizing signal.
- ◁ indicates that the phase is lagging.
  - ▷ indicates that the phase is in advance.
  - ■ indicates that the phase is correct.
- Use the SCH Adj item to set the correction amount so that this is indicated as ■.
- For a digital input or a D1 system (DVS-8000C), this always appears as ■.
- SCH Adj:** Indicates the SCH correction on the switcher. This is adjustable in the range  $-128$  to  $+127$  in increments of 1. For a digital input or a D1 system, this adjustment is not required and in those cases appears as “—”.
- V Shift:** For a digital input, this indicates the color frame automatic correction state, appearing as enabled (Enb) or disabled (Dis). For an analog input, it always appears as “—”.

### Adjusting an analog input signal in a D2 system (DVS-8000)

- 1** Use either of the following methods to select the input signal for which phase adjustment is to be carried out.
  - Press F1 (Button No), and enter the cross-point button number on the numeric keypad.
  - Press F7 ( ↑ ) or F8 ( ↓ ).The information for the selected input signal appears.
- 2** Setting the Genlock mode.  
Press F2 (Genlock) to toggle between Auto and Sync.
- 3** Adjusting the input phase.  
Normally, adjust the signal output phase on the external equipment so that the In Phs item shows zero.
- 4** Adjusting the hue correction amount.  
Press F3 (Hue), and enter the numeric value in the input window. Adjust the value by inputting a color bar signal or similar, and observing the result on a vectorscope.
- 5** Adjusting the horizontal phase correction amount.  
Press F4 (Phase Adjust), and enter the numeric value in the input window.
- 6** Adjusting the SCH phase correction amount.  
Press F5 (SCH Adjust), and enter the numeric value in the input window. Adjust until the SCH item shows ■.

---

### **Making adjustments to a digital input signal or in a D1 system (DVS-8000C)**

- 1** Use either of the following methods to select the input signal for which phase adjustment is to be carried out.
  - Press F1 (Button No), and enter the cross-point button number on the numeric keypad.
  - Press F7 ( ↑ ) or F8 ( ↓ ).The information for the selected input signal appears.
- 2** Adjusting the input phase.  
Normally, adjust the signal output phase on the external equipment so that the In Phs item shows zero.
- 3** Adjusting the horizontal phase correction amount.  
Press F4 (Phase Adjust), and enter the numeric value in the input window.
- 4** Adjusting the color frame phase.  
Adjust the external equipment so that the CF item indicates Norm.  
Alternatively, press F6 (V Shift) so that the V Shift item indicates Enb; the phase will be corrected automatically, and Norm will appear.  
This operation is not necessary on D1 systems (DVS-8000).

### Setting the cross-point number—XPT ASSIGN menu

The XPT ASSIGN menu allows you to assign cross-point button numbers to each of the signals being used by the switcher. You can also change these assignments once made. This applies not only to the signals input to the Primary 1 to Primary 32 connectors on the rear panel of the switcher, but also to signals generated internally by the switcher such as color background and black signals, and the output signals of an M/E block re-input to the other M/E block.

**Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F2 (Input Control) → F2 (Xpt Assign)**

XPT ASSIGN		Source		Select	
No	Source	Primary?	PVW		
0	Primary 1	BLACK	ME?PVW		
		BGCOL?	CRK FILL? *		
		PGM	CRK KEY? *		
		CLEAN PGM	FRM MEM?		
		ME?PGM	NO ASSIGN		

\* In D2 systems (DVS-8000) the final question mark does not appear on the CRK FILL and CRK KEY items.

### Items displayed

**No:** Indicates a cross-point button number.

The switcher provides for button numbers from 0 to 63 inclusive, but these numbers do not all correspond to physical buttons on the control panel.

- The button numbers for the M/E-1, M/E-2 and PGM/PST blocks are from 0 to 28.
- The button numbers for the AUX/PVW bus are from 0 to 45.

For signals which do not require a button to be pressed (such as the signal allocated to the automatic key source selection—see page 9-24) you can allocate a cross-point number for which no button exists.

**Source:** Indicates the signal name allocated to the cross-point number. This is selected from the list of signal names in the panel on the right.

---

List of signal names (in panel): A final question mark indicates that this signal still requires a cross-point number to be allocated.

- CRK FILL and CRK KEY are only effective when the switcher is fitted with the optional BKDS-8030/8031 clean chroma key board.
- FRM MEM is only effective when the switcher is fitted with the optional BKDS-8040/8041 frame memory board.

### Setting a cross-point number

- 1** Press F1 (Button No).  
The input window appears on the menu screen.
- 2** Enter the cross-point button number to be set (0, 1, 2... from the left of the control panel) using the numeric keypad.  
In the AUX/PVW block the lower row of buttons go from 0 to 28, and the upper row from 29 to 45.
- 3** Use F7 (↑) and F8 (↓) to move the reverse video cursor to the required signal name. If the signal name has a final question mark appended, enter the numerical value in the input window.
- 4** Press F5 (Select) to select the signal for which the cross-point button is to be assigned.

Setting the automatic key source selection—KEY SRC ASSIGN menu

The KEY SRC ASSIGN menu allows you to assign a key source signal to be selected automatically for a particular key fill signal. When this assignment is made, selecting the key fill signal automatically selects the corresponding key source signal.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F2 (Input Control) → F3 (Key Source)

KEY SRC ASSIGN

No	Fill	No	Source
01	Primary 3	08	Primary 13

Edit

Fill Button No

Source Button No

↑

↓

Assigning the key source signal

- 1

Use either of the following methods to select the key fill signal.
  - Press F5 (Fill Button No), and enter the cross-point button number in the input window.
  - Use F7 ( ↑ ) and F8 ( ↓ ) to select the signal number.
- 2

Use either of the following methods to select the key source signal to be assigned to the key fill signal displayed.
  - Holding down F1 (Edit), press the corresponding cross-point selection button on the AUX/PVW bus of the control panel.
  - Press F6 (Source Button No), and enter the cross-point button number in the input window.

---

## Making Keyer Settings—KEYER Menu

The KEYER menu is used for setting the key output.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F3 (Keyer)

KEYER							
Clip Gain	Key Memory	Ext Mask	Band Width	Shadow Width			

Press one of F1 to F5 to access the next layer of menus.

- Press F1 (Clip Gain) to set the default parameters for the key output.
- Press F2 (Key Memory) to set the key output memory function.
- Press F3 (Ext Mask) to set the external mask signal.
- Press F4 (Band Width) to set the bandwidth of the key signal.
- Press F5 (Shadow Width) to set the maximum width of a drop border or shadow applied to the key edge.

# Setup Operations

## Setting the keyer default values—DEF CLIP/GAIN menu

The DEF CLIP/GAIN menu sets default values for the key output of each of the keyers.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F3 (Keyer) → F1 (Clip Gain)

DEF CLIP/GAIN	Lum	Clip	100	100	100	100	100
		Gain	50	50	50	50	50
		Dens	80	80	80	80	80
	Lin	Clip	100	100	100	100	100
		Gain	50	50	50	50	50
		Dens	80	80	80	80	80
		↓	M / E1 KEY1	M / E1 KEY2	M / E2 KEY1	M / E2 KEY2	DSK

### Items displayed

Lum: Indicates the parameters when the key type is selected as luminance key.

Lin: Indicates the parameters when the key type is selected as linear key.

### Setting the key output default parameters

- 1 Press one of F4 to F8, to select the keyer for which the setting is to be made.
- 2 Press F3 ( ↓ ) to mark the parameter to be set with the reverse video cursor.
- 3 Enter the default value in the input window.  
The allowable ranges for the parameters are as follows:
  - CLIP: -10 to 110
  - Gain: 1 to 999
  - Dens: 0 to 100This changes the default value.



### Setting the key memory function

The KEY MEMORY menu allows you to enable or disable the key memory function.

When this function is enabled, individual parameters (clip, gain, density etc.) are held in memory for each keyer, key source, and cross-point number. The next time you select the same keyer, key source, or cross-point number, the parameters are automatically recalled.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) →  
F3 (Keyer) → F2 (Key Memory)

KEY MEMORY							
Key Memory							

### Enabling the key memory function

- 1** Press one of F4 to F8 to select the keyer for which the setting is to be made.
- 2** Press F1 (Key Memory) to toggle the function on or off.

# Setup Operations

## Setting the external mask signal

Pressing the EXT button in the MASKS section of the common control block of the control panel allows you to use the particular signal assigned to this button as the key mask signal. The EXT MASK SOURCE menu allows you to select the signal assigned to this button. A separate assignment can be made for each of the M/E-1, M/E-2 and PGM/PST blocks.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F3 (Keyer) → F3 (Ext Mask)

EXT MASK SOURCE

No	ME1	No	ME2	No	DSK
20	Primary 03	11	Primary 21	05	Primary 15

Edit

M / E 1

M / E 2

DSK

## Selecting the external mask signal

- 1

Press one of F4 to F8 to select the keyer for which the setting is to be made. The selected keyer is highlighted in reverse video.
- 2

Holding down F1 (Edit), press the button on the AUX/PVW bus of the control panel corresponding to the signal to be selected.  
The name of the selected signal appears on the menu screen.

### Setting the key signal bandwidth—BAND WIDTH menu

The BAND WIDTH menu allows you to set the key signal bandwidth for each keyer and key type separately.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F3 (Keyer) → F4 (Band Width)

BAND WIDTH					
Lum	1	1	1	1	2
Lin	3	3	3	3	3

	Band Width	↓	M / E1 KEY1	M / E1 KEY2	M / E2 KEY1	M / E2 KEY2	DSK
--	------------	---	-------------	-------------	-------------	-------------	-----

### Setting the key signal bandwidth

- 1** Press one of F4 to F8 to select the keyer for which the setting is to be made.
- 2** Use F3 ( ↓ ) to select the luminance (Lum) or linear (Lin) key type. The selected key type is highlighted in reverse video.
- 3** Press F2 (Band Width) to set the bandwidth level. The bandwidth is shown as an integer from 1 to 5, and pressing F2 cycles through these values. The larger the value, the greater the bandwidth.  
A greater bandwidth tends to produce cross colors at the key edge. On the other hand, a reduced bandwidth prevents the edge from being sharp.

Setting the shadow width—SHADOW WIDTH menu

The SHADOW WIDTH menu allows you to set the maximum width of a drop border or shadow applied to the key edge. This can be set to 4H or 8H for each keyer.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F3 (Keyer) → F5 (Shadow Width)

SHADOW WIDTH									
8      4      8      8      8									
		Shadow Width	ME1 KEY1	ME1 KEY2	ME2 KEY1	ME2 KEY2	DSK		

Setting the maximum width of a drop border or shadow

- 1 Press one of F4 to F8 to select the keyer for which the setting is to be made.
- 2 Select 4H or 8H. Pressing F3 (Shadow Width) toggles between the two values.

## Making Wipe Settings—WIPE Menu

The WIPE menu allows you to set the default values for wipe parameters such as the position of the wipe center, or the edge softness. Also use this menu to set the wipe patterns to be recalled by the PROG 1 and PROG 2 buttons in the wipe pattern selection section.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F4 (Wipe)

<b>WIPE</b>		Posit Offset	X	+0.25 pixel
			Y	-3.50 pixel
		Wipe Edge Soft		+20 %
		Pattern	Prog 1	29
			Prog 2	136
		Pattern Prog 1	Pattern Prog 2	Posit Offset X
				Posit Offset Y
				Edge Soft

### Items displayed

**Posit Offset X, Y:** These figures indicate the position of the center of the wipe pattern. Each of the x and y values can be set in the range -16.00 to +15.75 pixels, in 0.25 pixel units.

**Wipe Edge Soft:** This indicates the softness value for the wipe edge when the SOFT button in the EDGE section of the control panel wipe section is in the off position. The larger the numerical value, the softer is the edge. The values are adjustable in the range  $\pm 50\%$ , in steps of 1%. Note that this setting also affects the edge of ■ wipe pattern generated using ■ pattern key or color background.

Generally a setting in the range -20% to -30% is recommended.

**Pattern Prog 1, 2:** These items indicate the wipe pattern numbers allocated to the PROG 1 and PROG 2 buttons in the control panel wipe pattern selection section.

### Moving the position of the wipe pattern center

- 1** To move the position horizontally, press F5 (Posit Offset X).  
To move the position vertically, press F6 (Posit Offset Y).
- 2** Enter the center position offset in the input window. The wipe pattern center moves accordingly.

### Setting the wipe pattern edge softness

- 1** Press F7 (Edge Soft).
- 2** Enter the numerical value in the input window.

### Allocating a wipe pattern to the PROG 1 or PROG 2 button

- 1** To allocate a wipe pattern to the PROG 1 button, press F3 (Pattern Prog 1). To allocate a wipe pattern to the PROG 2 button, press F4 (Pattern Prog 2).
- 2** Enter the number of the wipe pattern to be allocated in the input window.  
For wipe pattern numbers, see the List of Wipe Patterns at the end of this guide.

## Making Chroma Key Settings—CHROMAKEY Menu

The CHROMAKEY menu allows you to make settings for the input signal for use in chroma keying. This menu only appears on D2 systems (DVS-8000), and does not appear on D1 systems (DVS-8000C).

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F5 (Chroma Key)

CHROMAKEY		
	ch1	ch2
Format	RGB	Betacam ( 0 )
Sync	INT	EXT
Phase Adjust	+2CLK	-12CLK
7.5 IRE Setup		ON

CH	RGB	$\beta$ -CAM ( 0 )	$\beta$ -CAM ( 7.5 )	SMPTE	Sync	Phase Adjust	7.5 IRE Setup
----	-----	--------------------	----------------------	-------	------	--------------	---------------

### Items displayed

ch1/ch2: Indicates the chroma key channels.

The DVS-8000 allows two chroma key source signals to be input, for channels 1 and 2.

**Format:** Indicates the format of the signal (chroma key source)input to the CHROMA KEY INPUT connector. Select one of RGB,  $\beta$ -CAM or SMPTE. If  $\beta$ -CAM is selected, there are two possibilities: the (7.5) or (0) indicates whether or not the signal amplitude includes a black setup of 7.5 IRE units.

**Sync:** Indicates the synchronization mode of the input signal. Set to INT when a synchronizing signal is added to the G/Y input signal to the CHROMA KEY INPUT connector. In this case no signal input is required to the SYNC connector. When no synchronizing signal is supplied with the G/Y input signal, supply a synchronizing signal to the SYNC connector (4 V), and set this item to EXT.

**Phase Adjust:** Indicates the horizontal phase adjustment of the input signal.  
This is adjustable in the range  $\pm 128$  clock pulses in increments of 1 clock pulse.

**7.5 IRE Setup:** Indicates whether or not the signal output from the chroma key circuit has a black setup of 7.5 IRE units in its amplitude.

### Setting up the chroma key

- 1** Select the chroma key channel for which the setting is to be made.
- 2** Press one of F2 to F5, to select the format of the chroma key source signal.
- 3** Select internal or external synchronization.  
Press F7 (Sync) to toggle between INT and EXT.
- 4** Press F6 (Phase Adjust) and enter the numeric value in the input window.
- 5** Select whether or not “7.5 IRE Setup” is applied.  
Press F8 (7.5 IRE Setup) to toggle the value on or off.



## Making Output Signal Settings—OUTPUT CONTROL Menu

The OUTPUT CONTROL menu allows you to adjust the phase of the output signal, and set the white clip and dark clip values.

Menu path: SET/DIAG → F1 (Setup) → F2 (Sw'er) → F3 (Keyer) → F6 (Output Control)

<b>OUTPUT CONTROL</b>		System Phase	:	+999.9μsec			
		Refout Phase	:	+999.9 μsec			
		7.5 IRE SETUP	:				
		White Clip	:	105%			
		Dark Clip	:	0%			
System Phase	Ref Out Phase	7.5 IRE Setup*	White Clip	Dark Clip			

\* On D1 systems (DVS-8000C), the F3 function is not present.

### Items displayed

**System Phase:** Indicates the phase difference between the external synchronizing signal input to the switcher and output signals such as PGM OUT. This is adjustable in the range  $\pm 999.9 \mu s$ , in  $0.1 \mu s$  steps.  
Press F1 to adjust.

**Ref Out Phase:** Indicates the phase difference between the external synchronizing signal input to the switcher and the synchronizing signal output from the switcher. This is adjustable in the range  $\pm 999.9 \mu s$ , in  $0.1 \mu s$  steps.  
Press F2 to adjust.

**7.5 IRE Setup:** Indicates whether or not the signal amplitude includes a black setup of 7.5 IRE units; press F3 to change the setting. This item does not appear on D1 systems (DVS-8000C).

**White Clip:** Indicates the white clip value of the output signal. The settable range is as follows:  
DVS-8000C (D1) systems:  $-7.2\%$  to  $+109.4\%$   
DVS-8000 (D2) systems:  $-20.0$  IRE to  $+139.8$  IRE units

Press F4 to adjust.

**Dark Clip:** Indicates the dark clip value of the output signal. The adjustable range is the same as for white clip, except that the dark clip setting cannot be greater than the white clip setting. Press F5 to adjust.

### **Adjusting the system phase**

Press F1 (System Phase) and enter the numeric value in the input window.

### **Adjusting the reference output phase**

Press F2 (Ref Out Phase) and enter the numeric value in the input window.

### **Making the setting for ■ black setup of 7.5 IRE units**

Press F3 (7.5 IRE Setup) to toggle the setting on or off.

### **Setting the white clip value**

Press F4 (White Clip) and enter the numeric value in the input window.

### **Setting the dark clip value**

Press F5 (Dark Clip) and enter the numeric value in the input window.

## Making GPI Input Settings—GPI IN Menu

The GPI IN menu allows you to set the trigger type and operation of the eight GPI input ports provided on the switcher.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F7 (GPI)

GPI IN	
1	⌋ M/E1 CUT
2	⌋ P/P CUT
3	× DSK CUT
4	⌋ FTB AT
5	× RUN
6	⌋ SNAP RECALL 10
7	—
8	—

Select

M/E1 CUT	DSK CUT	EFF RECALL?
M/E2 CUT	DSK AT	SNAP RECALL?
P/P CUT	FTB CUT	RUN
M/E1 AT	FTB AT	STOP
M/E2 AT		REWIND
P/P AT		PREV KF
		NEXT KF

Select

Trig Type

↑

↓

↑

↓

### Items displayed

1 to 8: Indicate the eight GPI ports on the switcher.

For details of the pin assignments on the GPI inputs, refer to Section 2-7 “Input/Output Signals of the Connectors,” page 2-7(E) of the DVS-8000/8000C operation and maintenance manual.

⌋ etc.: Indicate the waveforms of the signals input to the GPI ports from external equipment. The signal types are indicated symbolically, as follows.

⌋ : Positive polarity pulse signal. The rising edge is used as a trigger.

⌋ : Negative polarity pulse signal. The falling edge is used as a trigger.

× : Flip-flop signal. Each time the signal inverts, it causes a trigger action.

— : Inactive signal.

M/E1 CUT etc.: Indicates the switcher operation when the corresponding signal trigger occurs. Items with a final question mark require a numeric value to be input.

CUT: Carry out a cut.

AT: Carry out an auto transition.

EFF RECALL?: Recall a key frame effect. Enter a register number to be appended.

SNAP RECALL?: Recall a snapshot. Enter ■ register number to be appended.

RUN: Run a key frame effect.



STOP: Stop a key frame effect.

REWIND: Rewind to the beginning of a key frame effect.

PREV KF: Go back to the immediately previous key frame.

NEXT KF: Advance to the next key frame.

### Making GPI input settings

- 1** Use F4 (↑) or F5 (↓) to move the reverse video cursor to the required port number.
- 2** Select the trigger type. Pressing F3 (Trig Type) cycles through the types in the order of , , ×, −.
- 3** Select the trigger operation. Use F7 (↑) or F8 (↓) to move the reverse video cursor to the required operation.
- 4** Press F1 (Select), to display the highlighted operation in the panel on the left. If the selected operation includes a final question mark, enter the numeric value in the input window.

## Making Tally Display Settings—TALLY Menu

The TALLY menu allows you to assign a cross-point button number to the tally output sent for example to an external tally device.

Menu path: SET/DIAG → F1 (Setup) →  
F2 (Sw'er) → F8 (Tally)

01	Primary 01	11	Primary 11	21	Primary 21	31	Primary 31
02	Primary 02	12	Primary 12	22	Primary 22	32	Primary 32
03	Primary 03	13	Primary 13	23	Primary 23	33	---
04	Primary 04	14	Primary 14	24	Primary 24	34	---
05	Primary 05	15	Primary 15	25	Primary 25	35	---
06	Primary 06	16	Primary 16	26	Primary 26	36	---
07	Primary 07	17	Primary 17	27	Primary 27	37	---
08	Primary 08	18	Primary 18	28	Primary 28	38	---
09	Primary 09	19	Primary 19	29	Primary 29	39	---
10	Primary 10	20	Primary 20	30	Primary 30	40	---

Edit

Unlink

Button No

←

↑

↓

→

### Making tally settings

- 1 Press one of F5 to F8, to highlight the required tally in reverse video.  
For the relation between the pin numbers of the TALLY connector on the switcher rear panel and the tally numbers, refer to the Section 2-7 “Input/Output Signals of the Connectors,” page 2-7(E) of the DVS-8000/8000C operation and maintenance manual.
- 2 To output a tally, press F3 (Button No), and enter the cross-point number in the input window. Alternatively, hold down F1 (Edit), and press the corresponding button on the AUX cross-point bus.  
If a tally is not to be output, press F2 (Unlink). The tally indication changes to “—”, and the tally is not output.

Setting Up the DME-5000—DME SETUP Menu

The DME SETUP menu allows you to carry out settings on the DME-5000 attached to the switcher.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME)

<b>DME SETUP</b>			<table border="1"><thead><tr><th>LOG</th><th>PHY</th><th>GLBL</th></tr></thead><tbody><tr><td>1</td><td>1</td><td>*</td></tr><tr><td>2</td><td>2</td><td>*</td></tr><tr><td>3</td><td>4</td><td></td></tr><tr><td>4</td><td>6</td><td></td></tr></tbody></table>	LOG	PHY	GLBL	1	1	*	2	2	*	3	4		4	6		<table border="1"><tr><td colspan="2">Information CH1</td></tr><tr><td colspan="2">DME-5000 ( C ) SONY V1.00</td></tr><tr><td colspan="2">OPTION COMBINE GRAPHIC PAGE / CYL</td></tr><tr><td colspan="2">REMARK D2 NTSC PHY 01</td></tr><tr><td colspan="2">OTHERS GDC : V1.00 SIO : V1.00</td></tr></table>	Information CH1		DME-5000 ( C ) SONY V1.00		OPTION COMBINE GRAPHIC PAGE / CYL		REMARK D2 NTSC PHY 01		OTHERS GDC : V1.00 SIO : V1.00	
LOG	PHY	GLBL																											
1	1	*																											
2	2	*																											
3	4																												
4	6																												
Information CH1																													
DME-5000 ( C ) SONY V1.00																													
OPTION COMBINE GRAPHIC PAGE / CYL																													
REMARK D2 NTSC PHY 01																													
OTHERS GDC : V1.00 SIO : V1.00																													
Editor Protocol : <b>DME-5000</b> / SONY VTR 9PIN																													
<b>Config</b>	<b>Input Control</b>	<b>Output Control</b>	<b>GPI</b>																										

- Press one of F1 to F4 to access the next layer of menus.
- Press F1 (Config) to configure the basic operation mode of the DME-5000.
  - Press F2 (Input Control) to make settings related to the input.
  - Press F3 (Output Control) to make settings related to the output.
  - Press F4 (GPI) to make settings related to the GPI inputs.

Items displayed

- LOG (logical channel): Indicates the DME channels 1 to 4 which the control panel controls.
- PHY (physical channel): Indicates which DME is allocated to each of the logical channels.
- GLBL (global channel): Indicates with an asterisk the channels which can be manipulated in the global coordinate system.

The above items can be changed using the CH ASSIGN menu (see page 9-46).

---

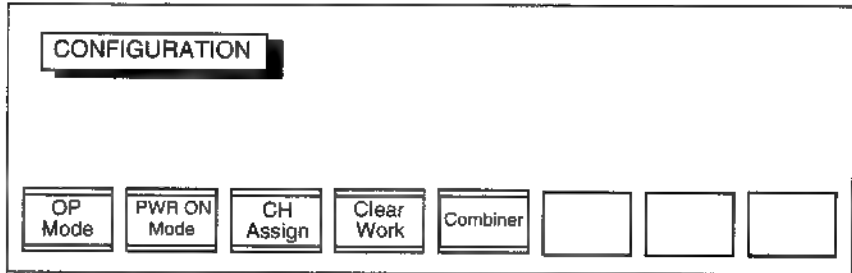
**Information:** This gives information on the channel currently selected with the DELEGATION buttons in the control panel's menu control block.

**Editor Protocol:** The DME-5000 can operate with either DME-5000 protocol or the Sony VTR 9-pin protocol. The protocol of the editor connected is determined automatically, and highlighted in reverse video.

### Setting the Operation Mode—CONFIGURATION Menu

The CONFIGURATION menu allows you to select the basic operation mode of the DME-5000.

Menu path: SET/DIAG → F1 (Setup) →  
F3 (DME) → F1 (Config)



Press one of F1 to F5 to access the next layer of menus.

- Press F1 (OP Mode) to set the output signal delay.
- Press F2 (PWR ON Mode) to set the power on mode.
- Press F3 (CH Assign) to carry out channel assignment.
- Press F4 (Clear Work) to set the operating mode of the CLR WORK BUFR button.
- Press F5 (Combiner) to make combiner settings.



### Setting the output signal delay—OPERATION MODE menu

The DME-5000 causes a delay between the input video signal and the output video signal, since the image has to be written temporarily in memory. Use the OPERATION MODE menu to set this delay to 1 or 2 frames. To add drop shadows (see page 5-25) to DME images, it is necessary to set the delay to 2 frames.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) →  
F1 (Config) → F1 (OP Mode)

OPERATION MODE							
Through Put							

### Setting the delay

To change the delay, press F1 (Through Put). Pressing F1 toggles the delay between 1 and 2 frames.

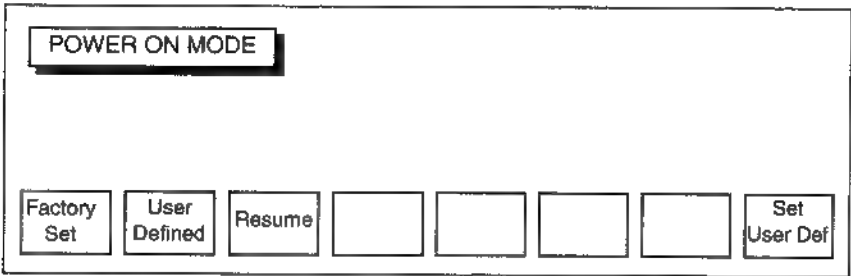
#### Note

When in the DROP SHADOW menu F1 (Drop Shadow) is off, the delay is automatically set to 1 frame even if the delay has been set to 2 frames through above operation.

Setting the power on mode—POWER ON MODE menu

There are three modes for powering on the DME-5000, affecting the treatment of setup data and the settings of control panel buttons and so forth. The POWER ON MODE menu allows you to set the required mode, and also to save and recall user settings.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F1 (Config) → F2 (PWR ON Mode)



Setting the power on mode

Press one of F1 to F3 to select the required mode, as follows. (The current selection is highlighted in reverse video.)

- F1 (Factory Set): The unit powers on with the factory settings.
- F2 (User Defined): The unit powers on with the user defined settings of BKGD & EDGE menu's submenus (BKGD, EDGE, CROP, and DROP SHADOW) (see page 5-17).
- F3 (Resume): The unit powers on with the settings unchanged from when it was powered off.

Saving user settings

Use the following procedure to write the BKGD & EDGE menu settings to be used when the unit is powered on in user defined mode to EEPROM.

- 1 Using the BKGD & EDGE menu, set the image state to be saved.
- 2 Press F8 (Set User Def) to save the settings.

---

### **About DME-5000 setup settings**

Each time the DME-5000 setup settings are changed, the new settings are written to EEPROM. Whether the power on mode is set to Resume or User Defined, therefore, the previous settings are always recalled when the unit is powered on.

Assigning channels—CH ASSIGN menu

The DME-5000 allows you to select the channels controlled with the DME CH1 to DME CH4 and GLBL buttons on the control panel. It is first necessary to assign physical channels (defined by the system connections) to these logical channels using the CH ASSIGN menu.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F1 (Config) → F3 (CH Assign)

CH ASSIGN

Physical CH	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Logical CH	01	0	02	03	■	0	0	04								
Global CH	*		*													

Logical CH

Global Enable

Global Answer

←

→

Assigning the DME logical channels

- 1 Press F7 ( ← ) or F8 ( → ) to highlight the required physical channel in reverse video.
- 2 Press F3 (Logical CH).
- 3 Enter the logical channel number (1 to 4) in the input window.  
To assign no logical channel to this physical channel, enter 0.

Selecting the channels to be manipulated in global mode

Select the channels to be manipulated when the global channel is selected as follows.

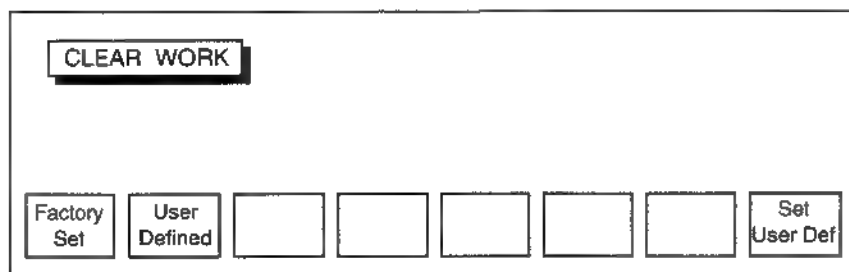
Highlight the required channel in reverse video, and press F4 (Global Enable).

An asterisk appears in the Global CH row under this channel.  
To cancel the channel selection, press F4 again.

### Setting the clear working buffer mode—CLEAR WORK menu

The CLR WORK BUFR button in the EDIT section of the menu control block has two operating modes. The CLEAR WORK menu allows you to set the button to either of the two modes. You can also make settings for the background and edges of the current image, and save these user settings for the user defined mode.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) →  
F1 (Config) → F4 (Clear Work)



### Setting the clear working buffer mode

Press F1 or F2 to select the corresponding mode.

- F1 (Factory Set): The image state is initialized to the factory settings.
- F2 (User Defined): The image state is initialized to the user settings saved as described blow. The user settings which can be saved are those of BKGD & EDGE menu's submenus (BKGD, EDGE, CROP, and DROP SHADOW) (see page 5-17).

### Saving user settings

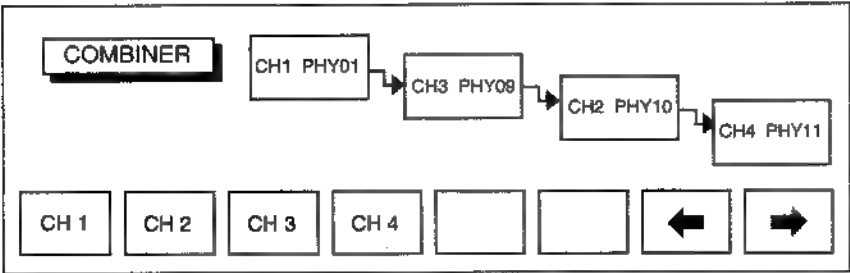
- 1** Using the BKGD & EDGE menu, adjust the image to the state to be saved.
- 2** Press F8 (Set User Def).  
This saves the settings until this button is pressed again. Pressing the CLR WORK BUFR button initializes the image to these settings.

Setting the combiner configuration—COMBINER menu

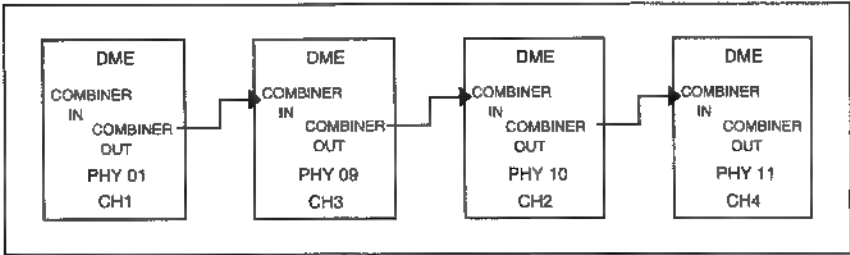
The combiner function allows the image output of one channel to be input to another channel to combine the images. To use this function requires the DME-5000 to be fitted with an optional BKDM-5020/5021 combiner board.

The COMBINER menu allows you to configure the connection of the channels.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F1 (Config) → F5 (Combiner)



The menu appears as shown above, showing four units connected in sequence. In this example the physical connections are as follows.



- 1 Using F1 to F4, select the channel to be set.
  - 2 Using F7 ( ← ) or F8 ( → ), move the selected channel number to the correct position for the actual connection.
- Repeat these two steps, so that all of the channels are in the correct position.

## Making DME Input Settings—INPUT CONTROL Menu

The INPUT CONTROL menu gives access to the various menus for making DME input settings.

Menu path: SET/DIAG → F1 (Setup) →  
F3 (DME) → F2 (Input Control)

INPUT CONTROL							
AUX Control	Router Control	Input Signal	Key Source				

Press one of F1 to F4 to access the next layer of menus.

- Press F1 (AUX Control) to make settings for the control of the switcher AUX bus.
- Press F2 (Router Control) to set the source selector.
- Press F3 (Input Control) to set the input signal.
- Press F4 (Key Source) to assign a key signal to the input signal.

Making the AUX bus control settings—AUX CONTROL menu

The AUX CONTROL menu allows you to make settings so that the signals required by the DME-5000 for controlling the AUX bus of the switcher can be selected.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F2 (Input Control) → F1 (AUX Control)

AUX CONTROL

Video		Key	
Address	D / A	Address	D / A
AUX 1	Digital	AUX 2	Analog

Video  
AUX #

Video  
D / A

Key  
AUX #

Key  
D / A

Items displayed

Video/Key: Indicates the video signal or key signal input to the DME.

Address: This indicates which of the AUX OUTPUTS connectors (1 to 4) supplies the output signal input to the DME. This setting depends on the actual connections between the switcher and the DME-5000.

D/A: Indicates whether the input signal is digital or analog.

Setting the video input signal

- 1 Press F1 (Video Aux #). The input window appears.
- 2 Enter the number (1 to 4) of the AUX OUTPUTS connector.
- 3 Select digital or analog. Pressing F2 (Video D/A) toggles between digital and analog.

Setting the key input signal

Make this setting in the same way as the video input signal, but pressing F3 (Key Aux #) for the AUX OUTPUTS connector number, and F4 (Key D/A) to select digital or analog.



**Setting the source selector—ROUTER CONTROL menu**

A BVS-V1201, DVS-V1201 or BKDM-5080 can be connected to the DME-5000 as a source selector. The ROUTER CONTROL menu allows you to set the signals input to the DME from these units, and also to select the cross-point number to be allocated for use by the DME.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F2 (Input Control) → F2 (Router Control)

ROUTER CONTROL

	D / A	Type	Remark
Video	D	BKDM-5080	UA2 = 01 DEST #1
	A	BVS-V1201	UA2 = 04 08
Key	D	DVS-V1201	UA2 = 01 02
	A	—	

V / K

D / A

Selector Type

UA2 \*  
1

UA2 \*  
2

Unit

Factory Set

\* If the F3 (Selector Type) setting is BKDM-5080, the F4 function is labeled UA2, and the F5 function DEST.

**Items displayed**

**Video/Key:** Indicates the video signal or key signal input to the DME.

**D/A:** Indicates whether the input signal is digital or analog.

**Type:** Indicates the source selector type.

**Remark:**

- If a BVS-V1201 or DVS-V1201 is selected, the number following “UA2 = ” is the unit address. If two or more of the same units are connected, the unit address is required. Refer to the manual for the units for more details of unit addresses.
- If a BKDM-5080 is selected, the number following “UA2 = ” is the unit address, and the number following “DEST #” indicates the destination. Refer to the manual for the BKDM-5080 for more details of these numbers.

### Setting the source selector

- 1** Select whichever of the video or key signal is to be set. Pressing F1 (V/K) toggles between video and key.
- 2** Select whether the digital or analog connectors are to be used. Pressing F2 (D/A) toggles between digital and analog.
- 3** Select the device to be used as the source selector. Press F3 (Selector Type) to cycle through the available types, which depend on whether the input is digital or analog as follows:
  - Digital: BKDM-5080 → DVS-V1201 → “–”
  - Analog: BVS-V1201 → “–”In order not to use a routing switcher, select “–”.

#### Note

Each time you change the setting of the Type item, or after pressing F8 (Factory Set), the cross-point allocation reverts to the factory setting.

- 4** Setting the unit address.
  - You can use two each BVS-V1201 and DVS-V1201 units. To set the unit address of the first unit, press F4 (UA2 1), and enter the number in the input window. To set the unit address of the second unit, press F5 (UA2 2), and enter the number in the same way. If only using one unit, set the unit address for the second unit to 0.
  - To set the unit address for a BKDM-5080, press F4 (UA2), and enter the number in the input window. Next press F5 (DEST), and enter the destination number.

#### Note

When using two routing switchers, connect the output of the first switcher to input number 1 on the second switcher. In this case the physical address of the input terminals is 1 to 12 for the first switcher, and 13 to 23 for the second.

---

### **Setting the DME cross-point number**

The DME-5000 has cross-point numbers in the range 0 to 63. After changing the source selector setting, it is necessary to allocate the cross-point number used by the DME to the input connectors of each of the units.

There are two ways of making this allocation, using either the factory settings or user settings, as follows.

#### **Using the factory settings**

These settings allocate the DME cross-point numbers (0, 1, 2... 63) in sequence from the first input of the routing switcher.

In the ROUTER CONTROL menu, press F8 (Factory Set).

Using user settings

To set the cross-point numbers yourself, use the UNIT menu.

- 1** In the ROUTER CONTROL menu, press F7 (Unit). The Unit menu appears.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F2 (Input Control) → F2 (Router Control) → F7 (Unit)

Xpt No	UA2	DEST	Source
1	01	1	2

1 10 20 30 38

Unit 1 UA 2 = 01 DEST # = 1

A 1 12 13 23

Unit 3 UA 2 = 02 Unit 4 UA 2 = 04

Button No ← → Select Unit Source Unlink

In the figure, the numbers (1 to 38 etc.) show the currently set source selector physical addresses.

- 2** Select the DME cross-point number to be set. This number is indicated under “Xpt No” in the box at the top of the menu screen.

Use either of the following selection methods:

- Press F2 (Button No) to make an input window appear, and enter the cross-point number in the input window.
- Press F3 ( ← ) or F4 ( → ).

- 3** Select D (digital) or A (analog). Pressing F5 (Select Unit) toggles between digital and analog.

- 4** Specify the physical address corresponding to the selected DME cross-point. Press F6 (Source), and enter the number in the input window.

The number appears under “Source” in the box at the top of the menu screen, completing the setting.

To allocate a DME cross-point to no physical address, press F8 (Unlink), causing “ – ” to appear in the table.

**Setting the input signal—INPUT SIGNAL menu**

The DME-5000 normally takes its input signals through a source selector such as a routing switcher. The INPUT SIGNAL menu allows you to make setting for individual input signals from the selectors.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F2 (Input Control) → F3 (Input Signal)

INPUT SIGNAL

Button No	Type	H Delay	Hue	7.5 IRE Set up
1	$\beta$ -CAM(0)	1	+0.30°	-

Button No

Signal Type

H Delay

Hue

7.5 IRE Setup \*

\* On D1 systems and 625-line systems, the F5 function is not present.

**Items displayed**

Button No: Indicates the DME cross-point number.

Signal Type: Indicates the format of the input signal.

On a 525-line system, when using the DME in component mode only, it is necessary to select either SMPTE or  $\beta$ -CAM. (When  $\beta$ -CAM is selected, '(7.5)' or '(0)' is additionally displayed following the signal type whether or not the signal amplitude includes a black setup of 7.5 IRE units.) In all other cases the format is determined automatically.

The signal formats which can be input to the DME-5000 are as follows:

Scan lines	Component/ composite	Digital/analog	Signal format
525	Composite	Digital	D2
		Analog	NTSC
	Component	Digital	D1
		Analog	$\beta$ -CAM or SMPTE
625	Component	Digital	D1
		Analog	EBU

**H Delay:** Indicates the delay of the output signal with respect to the input signal.

Set to 0 or 1. Set to 1 for a switcher such as the DVS-8000/8000C for which the output is delayed by 1H (one horizontal scan line) with respect to the input.

**Hue:** When the input signal is analog, this indicates the correction amount for fine adjustment of the hue. It is adjustable in the range  $-5.00^\circ$  to  $+5.00^\circ$  in steps of  $0.01^\circ$ . If the input signal is digital, this item appears as “—”.

**7.5 IRE Setup:** Indicates whether or not the signal used has a black setup of 7.5 IRE units. In D1 and 625-line systems this item always appears as “—”.

### Setting the input signal

- 1** Select the input signal to be set using either of the following two methods:
  - Press F1 (Button No), and enter the cross-point number in the input window.
  - Press F7 (↑) or F8 (↓).
- 2** Set the delay amount. Pressing F3 (H Delay) toggles the value between 0 and 1.
- 3** For an analog signal, set the hue adjustment. Press F4 (Hue), and enter the numeric value in the input window. For a digital signal this setting is not required.
- 4** Making the setting for black setup. Press F5 (7.5 IRE Setup) to toggle the setting on or off. For D1 systems and 625-line systems this setting is not required.

**Setting the format of an analog component input signal**

To input an analog component signal in 525 line mode, proceed as follows after selecting the cross-point number for the signal.

- 1** Press F2 (Signal Type).  
The soft key changes as follows:

		$\beta$ -CAM (0)	$\beta$ -CAM (7.5)	SMPTE			

- 2** Press one of F3 ( $\beta$ -CAM(0)), F4 ( $\beta$ -CAM(7.5)) or F5 (SMPTE).

Assigning the key source—KEY SOURCE ASSIGN menu

When F6 (Auto Select) is selected in the KEY MODE menu (see page 5-51), selecting a video signal automatically selects the key source signal assigned to that video signal. The menu allows you to make this assignment.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F2 (Input Control) → F4 (Key Source)

KEY SOURCE ASSIGN	
VIDEO	KEY
11	18
Edit	
Unlink	
Video Button No	Key Button No
	↑
	↓

Assigning the key source

- 1 Use any one of the following methods to select the video signal for which the assignment is to be made.
  - Press F5 (Video Button No) and enter the DME cross-point number in the input window.
  - Press F7 ( ↑ ) or F8 ( ↓ ).
- 2 Use either of the following methods to select the key source signal to be assigned to the selected video signal.
  - Holding down the F1 (Edit) button, press the button on the AUX/PVW bus of the switcher.
  - Press F6 (Key Button No) and enter the cross-point number in the input window.This completes the setting.



## Making Output Signal Settings—OUTPUT CONTROL Menu

The OUTPUT CONTROL menu allows you to set the output signals from the DME, and also the clip values for the color matte signals used for backgrounds, borders and shadows.

Menu path: SET/DIAG → F1 (Setup) → F3 (DME) → F3 (Output Control)

<b>OUTPUT CONTROL</b>		Video H Phase	:	0 CLK			
		Key H Phase	:	0 CLK			
		Signal Type	:	β-CAM			
		SC Phase	:	0°			
		White Clip	:	133%			
		Dark Clip	:	-33%			
Video H Phase	Key H Phase	Signal Type	7.5 IRE Setup	SC Phase	White Clip	Dark Clip	

### Items displayed

**Video H Phase:** Indicates the phase adjustment of the analog video output. This is adjustable in units of one sampling clock pulse, indicated by 'CLK'.

**Key H Phase:** Indicates the phase adjustment of the analog key output. The setting is adjustable in the same way as Video H Phase. The sampling clock pulse duration is 296 ns for D1 systems and 280 ns for D2 systems

**Signal Type:** Indicates the analog output format. The following output signal formats can be selected:

Scan lines	Mode	Output signals
525	Composite	NTSC
525	Component	β-CAM or SMPTE
625	Component	EBU

**SC Phase:** Indicates the sub-carrier phase of the analog video output. This is adjustable in units of 0.01°.

**White Clip:** Indicates the white clip value for color matte signals generated in the DME. This is adjustable in units of 1%.

**Dark Clip:** Indicates the dark clip value for color matte signals generated in the DME. This is adjustable in units of 1%.

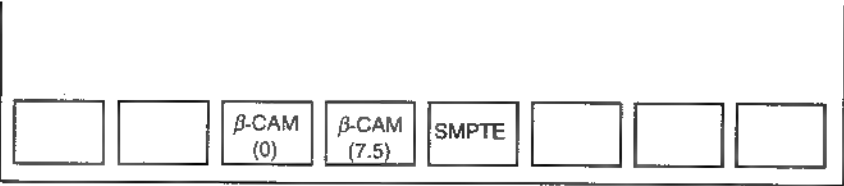
Adjusting the phase of the output signal

- 1 • Press F1 (Video H Phase) to adjust the video output.
  - Press F2 (Key H Phase) to adjust the key output.
- 2 Enter the numeric value in the input window.

Setting the analog output format

For 525-line analog component outputs only, the format can be selected.

- 1 Press F3 (Signal Type). The soft key display changes as follows.



- 2 Press one of F3 (β-CAM(0)), F4 (β-CAM(7.5)) or F5 (SMPTE).

---

### **Making the setting for black setup of 7.5 IRE units**

For 525-line composite outputs only, you can select whether or not a black setup of 7.5 IRE units is to be included in the amplitude of the video output signal.

Press F4 (7.5 IRE Setup) to toggle the setting on or off.

### **Adjusting the sub-carrier phase**

Press F5 (SC Phase) and enter the numeric value in the input window.

### **Setting the white clip and dark clip values**

- 1**
  - To set the white clip value, press F6 (White Clip).
  - To set the dark clip value, press F7 (Dark Clip).

- 2** Enter the numeric value in the input window.

Setting the GPI Inputs—GPI IN Menu

The GPI IN menu allows you to set the trigger types for the four GPI inputs provided by the DME.

Menu path: SET/DIAG → F1 (Setup) →  
F3 (DME) → F4 (GPI)

GPI IN

Port No.	Trigger Type	ACTION
1		EFFECT1
2		STOP
3		RUN / STILL
4		

Select

OFF  
EFFECT ?  
RUN / STILL  
STOP  
REWIND  
NEXT KF  
FREEZE  
SNAPSHOT ?

PREV KF  
NEXT FRAME  
PREV FRAME  
NEXT FIELD  
PREV FIELD  
RWD JITTER  
STEP JITTER

Select

Trig Type

Items displayed

- 1 to 4: Indicate the four GPI ports on the switcher.  
For details of the pin assignments on the GPI inputs, refer to Section 2-7 “INPUT/OUTPUT SIGNALS OF CONNECTOR”, page 2-6(E) of the DME-5000 operation and maintenance manual.
- etc.: Indicate the waveforms of the signals input to the GPI ports from external equipment. The signal types are indicated symbolically, as follows.
- : Positive polarity pulse signal. The rising edge is used as a trigger.
  - : Negative polarity pulse signal. The falling edge is used as a trigger.
  - : Flip-flop signal. Each time the signal inverts, it causes a trigger action.
  - : Inactive signal.

In the above descriptions, positive means that the GPI line is open circuit, and negative that it is shorted.

---

**EFFECT1 etc.:** Indicates the DME operation when the corresponding trigger signal occurs. Items with a final question mark require a numeric value to be input.

**OFF:** GPI input ignored.

**EFFECT?:** Recall a key frame effect. Enter the register number at the end.

**RUN/STILL:** Toggle between run and still modes each time the GPI input occurs.

**STOP:** Stop a key frame effect.

**REWIND:** Rewind to the beginning of a key frame effect.

**NEXT KF:** Advance to the next key frame.

**PREV KF:** Go back to the immediately previous key frame.

**FREEZE:** Freeze the input image to the DME.

**SNAPSHOT?:** Recall a snapshot. Enter the register number at the end.

**NEXT FRAME/PREVIOUS FRAME:** Go to the next or previous frame of a stopped key frame effect.

**NEXT FIELD/PREVIOUS FIELD:** Go to the next or previous field of a stopped key frame effect.

**RWD JITTER/STEP JITTER:** Use when sending the output of the DME-5000 to a digital recording device. Until the DME-5000 receives the GPI input advancing it to the next frame it will stay in jitter mode between field 1 and field 2.

**RWD JITTER** carries out the jitter operation from the beginning of the key frame effect.

**STEP JITTER** advances to the next frame each time the GPI input is received, and waits in jitter mode.

### Making GPI input settings

- 1** Use F4 ( ↑ ) or F5 ( ↓ ) to move the reverse video cursor to the required port number.
- 2** Select the trigger type.  
Pressing F3 (Trig Type) cycles through the types.
- 3** Select the trigger operation.  
Use F7 ( ↑ ) or F8 ( ↓ ) to move the reverse video cursor to the required operation.
- 4** Press F1 (Select), to display the highlighted operation in the panel on the left.  
If the selected operation includes a final question mark, enter the numeric value in the input window.

## **Chapter 10**

### **Principal Specifications**

---

# Principal Specifications

---

## General

Power supply	100 to 240 V AC $\pm 10\%$ 50/60 Hz $\pm 10\%$
Power consumption	60 W
Temperature range	Operating 0 to 40°C (32 to 104°F) Performance guaranteed 10 to 35°C (50 to 95°F) Storage -20°C to +60°C (-4°F to +140°F)
Dimensions (w/h/d, excluding projections)	Approx. 1290 × 111 × 532 mm (50 <sup>3</sup> / <sub>4</sub> × 4 <sup>7</sup> / <sub>8</sub> × 21 <sup>3</sup> / <sub>8</sub> inches)
Weight	Approx. 33 kg (72 lb 12 oz)

## Signal input/output connectors

### SWITCHER CONTROL

SWITCHER FDD	RS-422A, D-SUB 9-pin
DME	RS-422A, D-SUB 9-pin
REMOTE	RS-422A, D-SUB 9-pin
FDD	Amphenol 50-pin
GPI	D-SUB 15-pin
TERMINAL	RS-232C, D-SUB 25-pin
REF IN	BNC, loop-through
	Black burst: 0.43 Vp-p (75 ohm termination)
	Composite sync: 4 Vp-p (75 ohm termination)



## Principal Specifications

---

### Standard accessories

- 3.5 inch floppy disk drive unit (1)
- 50-way interface cable for disk drive (1)
- D-SUB 15-pin connector (1)
- D-SUB 25-pin connector (1)
- Power cords (3)
- Power cord plug holder (2)
- Key top removing tool (1)
- Switch chips (13)
- Operation manuals (1 set)
- Maintenance manual (1)
- Disk drive mounting kit (1)

Design and specifications are subject to change without notice.

## Appendix

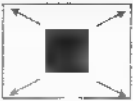
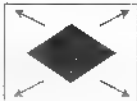



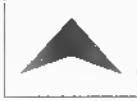
---

Letter to the Editor


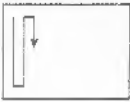



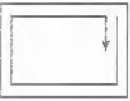
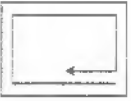


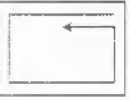
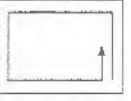
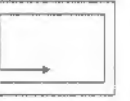
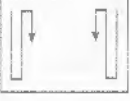


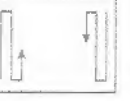
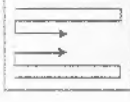
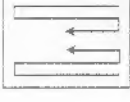
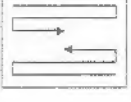

# Appendix

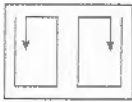
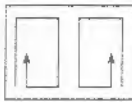
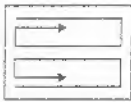
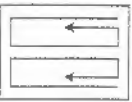
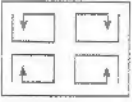
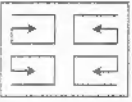

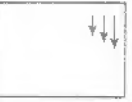
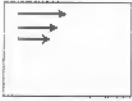
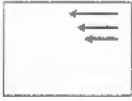
## List of Wipe Patterns




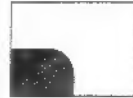

Standard wipes							
1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
22							

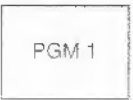
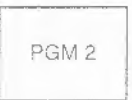
Enhanced wipes							
21		23		24		26	
27		29		48	MORE	49	POLYGON

Rotary wipes							
100		101		102		103	
104		105		106		107	
150		151		156		158	
160		162		516		518	
604		606		624		661	

Mosaic wipes (including diamond dust wipe)							
200		201		202		203	
206		207		208		209	
210		211		212		213	
250		251		252		253	
254		255		256		257	

Mosaic wipes (including diamond dust wipe)							
260		261		262		263	
264		265		266		267	
268		269		270	RANDOM	271	RANDOM 2
272	RANDOM 3	274	DIAMOND DUST				

Round corner wipes							
300		301		302		303	
304							

Others							
780		781					



The material contained in this manual consists of information that is the property of Sony Corporation and is intended solely for use by the purchasers of the equipment described in this manual.

Sony Corporation expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation or maintenance of the equipment described in this manual without the express written permission of Sony Corporation.